

Nos. 15875-76-77-78-79

United States  
Court of Appeals

For the Ninth Circuit

UNION OIL COMPANY OF CALIFORNIA, a Corporation,  
Appellant,

vs.

JOSEPH SALMERI,

Appellee.

UNION OIL COMPANY OF CALIFORNIA, a Corporation,  
Appellant,

vs.

FRANCISCO L. PEDRASAZ,

Appellee.

UNION OIL COMPANY OF CALIFORNIA, a Corporation,  
Appellant,

vs.

ANTOINE BELLECI,

Appellee.

UNION OIL COMPANY OF CALIFORNIA, a Corporation,  
Appellant,

vs.

ANTOINE BELLECI, Administrator of the Estate of  
JACQUES CARDINALE, Deceased, Appellee.

UNION OIL COMPANY OF CALIFORNIA, a Corporation,  
Appellant,

vs.

IDALENE J. CARDINALE and FRANCES E. CARDINALE,  
Administratrixes of the Estate of FRANK J. CARDINALE,  
Deceased, Appellees.

Transcript of Record **FILED**

In Three Volumes

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Volume III  
(Pages 363 to 685)

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Appeals from the United States District Court for the  
Northern District of California,  
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(Testimony of Charles Herbert Caldwell.)

Q. (By Mr. Vartan): Mr. Caldwell, after the conversation, or after you made the statement which you said you did to the man on the Santa Lucia, I believe you said he didn't answer you?

A. At what time, sir?

Q. When you said, "Looks like you are going to take 58 and a half gallons."

The Court: Looks like you are going to take 60.

The Witness: Yes, sir, that's right.

Q. (By Mr. Vartan): Oh, sixty. Did he reply to that statement? A. No, sir, he did not.

Q. What did he do?

A. He shut off the gas immediately. He took the fill spout out from the deck, he laid it down on the deck and stood up and he talked to another crewman that was right there beside him.

Q. At that time, Mr. Caldwell, did you look at the deck of the Santa Lucia in and about the fill pipe? A. Yes, sir.

Q. Did you notice any overflow of gasoline?

A. No, sir, I did not.

Q. What did the man do then?

A. He spoke to this other crewman in a low voice that I could not hear what they were saying. He then turned around [367] and he walked around the forward end of the cabin to the, probably to the other side of the boat, I couldn't see him any more.

Q. Did he walk slowly or fast?

A. Just average rate.

Q. He didn't appear excited?

A. No, he didn't.

(Testimony of Charles Herbert Caldwell.)

Q. Then what did you do, did you stand there?

A. I stood right in that same spot until he reappeared.

Q. When he reappeared did you have a conversation with him?      A. No, sir.

Q. Did you see what, if anything, he did?

A. Well, he reappeared, he had this sounding stick in his hand and I thought he was going to sound his tanks, so I moved down the wharf to a position where I was right above him and I was watching over the side as he prepared to sound his tanks. He raised the stick to the vertical as though he was going to drop it in the tank to measure it, and at that moment the boat exploded.

Q. Mr. Caldwell, from the time that he left the area of the fill pipe and was away and came back with the measuring stick, you stood there, did you not?      A. Yes, sir.

Q. And where were you looking as you stood there? [368]

A. I was looking down on the deck.

Q. Of what?      A. Of the boat.

Q. You didn't look behind you?      A. No, sir.

Q. You didn't look at the meter again?

A. Yes, sir, I did.

Q. What did the meter show then?

A. 58 and a half gallons.

Q. So that we get the order straight, from the time you saw the meter said 58 and a half gallons, then you went over and told the man that, or words to that effect; right?      A. Right.

(Testimony of Charles Herbert Caldwell.)

Q. And then you saw the man walk, come back with a stick, right? A. Yes.

Q. Is that when you looked at the meter again?

A. No, sir, I looked at the meter again in his absence.

Q. What did it read?

A. As I said, 58 and a half gallons.

Q. What did the meter say when you first saw it the third time and before you told him about the 58 and a half gallons?

A. I said it was in that neighborhood at that time.

Q. How much time elapsed from the time that you told the man about "Looks like it will take 60," or whatever the words [369] were, and then he left and then you came back to the meter, how much time elapsed?

A. There was little time elapsed at all, he shut it off immediately when I told him.

The Court: How did he shut the gas off?

The Witness: He had control of the loading right at the end of the hose.

The Court: Describe the mechanism of this hose which gave him power to shut the flow of the gas off. Will you describe that?

The Witness: Yes, sir. As he squeezed, closed his hand he could let the gas flow in his tank and if he released his hand the gas would shut off automatically.

The Court: How did that work, what did the hand apply to?

(Testimony of Charles Herbert Caldwell.)

The Witness: To the fill spout, much the same as an automobile service station.

The Court: You had a similar nozzle?

The Witness: Yes, sir.

The Court: Such as we have on the gasoline pumps in the service station?

The Witness: Very similar.

The Court: Where by pressing a lever you commence the flow or permit the flow of the gasoline from the end of the hose or the nozzle? [370]

The Witness: Yes, sir.

The Court: And then by releasing your pressure on that lever the flow is shut off.

The Witness: Correct.

The Court: Now, did you have any means on the dock of controlling the flow of gasoline?

The Witness: Yes, I could shut it off at any time.

The Court: How could you do that?

The Witness: By a quarter turn of this plug valve.

The Court: That was on the deck of the dock?

The Witness: Right by the meter.

The Court: How was this pump operated, you told us by gravity?

The Witness: There was no pump, sir, it is all gravity flow.

The Court: All gravity flow?

The Witness: Yes.

The Court: There is nothing that you turn on then to start the flow outside of opening a valve?

(Testimony of Charles Herbert Caldwell.)

The Witness: That is right.

The Court: Did you open that valve when he came alongside with the Santa Lucia?

The Witness: After he had secured, took the hose aboard, I opened the valves.

The Court: And that permitted the gasoline to go [371] down from your tank on the dock down to the ship.

The Witness: It would go into the ship when he opened his valve on the end of the hose.

Q. (By Mr. Vartan): Mr. Caldwell, after looking at the meter for the first time and noticing it registered in the vicinity of 58 and a half or 60 gallons, that would be the third time you looked at it, did you walk to the edge of the dock before you had the conversation with him about it looks like it will take about 60?

A. It was about a half a step to my right and I would be at the rail.

Q. Well, the meter is six feet back, is it not?

A. Yes, but I wasn't standing right at the meter when I observed it.

Q. That is what I am trying to get at. In other words, the meter you could see as you were standing at the edge of the dock, could you see the face of the meter standing at the edge of the dock?

A. Yes, sir.

Q. All right. So after this conversation whereupon Mr. Cardinale went to get the measuring stick you didn't have to walk to the meter, all you did was turn around and look at it?



(Testimony of Charles Herbert Caldwell.)

A. That's right.

Q. You turned around and looked at the meter and then you turned back facing the vessel and waited there until he got [372] back, didn't you?

A. Yes, sir.

Q. You didn't examine the floor of the dock around the meter or pass the meter on this side of the meter for any gasoline leakage?

A. I had it all within my view.

Q. Is it your testimony that after noticing that the meter read 58 and a half you made a point of examining the flooring of that dock for gasoline leaks?

A. In the area of the meter I could see it all at a glance.

Q. Did you make a specific examination of the floor of the dock after you observed that the meter read 58 and a half gallons?

Mr. Nave: Object to that as argumentative.

The Court: Overruled, he may answer. Do you understand the question?

The Witness: No, sir, I don't.

The Court: Did you, after you observed it was 58 gallons on the meter, registered on the meter, look at the flooring of the dock specifically to determine whether or not any gasoline had flowed over on your dock floor?

The Witness: May I answer it this way?

The Court: You can answer it either yes or no. Did you look at it, did you suspect that might have happened?

(Testimony of Charles Herbert Caldwell.)

The Witness: No, I didn't suspect that [373] might happen, and I didn't see any.

The Court: Did you ever have any trouble with leakage of gasoline on the dock?

The Witness: No, sir.

The Court: At any time while you were working on this dock?

The Witness: No, sir.

The Court: Did you ever have any trouble with leakage from the tank in which the gasoline was stored?

The Witness: No, sir.

The Court: How big was that tank, you say?

The Witness: It was a small tank, I think it held about 2,600 gallons.

The Court: Was it all constructed above the flooring of the dock?

The Witness: It was raised up about fourteen inches above the dock.

The Court: Did part of it protrude below the flooring of the dock?

The Witness: No, sir, it was all above deck.

The Court: It was all above deck. None was cradled beneath?

The Witness: No, sir.

The Court: All right. You say you never had trouble with leakage in it at any time. Did you ever have any [374] leakage in your hose connections or piping there?

The Witness: No, sir.

(Testimony of Charles Herbert Caldwell.)

Q. (By Mr. Vartan): Did you have any trouble with the meter before?

A. We occasionally had trouble with the meters.

Q. What trouble did you have with the meter?

A. Well, occasionally a meter would just stop up and refuse to turn.

Q. And when it would stop up would it leak?

A. No, sir.

Q. You have never seen a meter leak, even a drop? A. No, I haven't.

The Court: What was the construction of the hose that you handed down to the Santa Lucia?

The Witness: It was a reinforced rubber hose. In other words, it was solid to the extent it had a wire around the outside of it.

The Court: What was the diameter of it, do you know?

The Witness: I believe it is an inch and a quarter.

Q. (By Mr. Vartan): Mr. Caldwell, the first sensation that you sensed when this unusual occurrence took place was that everything turned white, isn't that true? A. Yes. [375]

Q. Pardon me? A. Yes, that's right.

Q. Then your sensation was having difficulty holding your balance, being pummeled by falling objects, is that true? A. Yes, that's right.

Q. In that order, the sensation was first everything turned white and then the next sensation was you had difficulty holding your balance, is that true?

A. That followed in that sequence, yes.



(Testimony of Charles Herbert Caldwell.)

Q. Pardon me?

A. They followed in that sequence.

Q. First everything turned white and then you had trouble holding your balance, is that right?

A. May I fill in some more of other things that happened in that same sequence?

The Court: Yes, tell us what happened.

The Witness: I would like to. As I was watching Mr. Cardinale the explosion must have occurred. Everything turned white. I don't recall the explosion, I don't remember a boom or anything. The next thing I remember I was turned around 180 degrees and I was facing the small diesel tank and I had my hands over my eyes, and I had a feeling that I was being pummeled, everything was hitting me and I was rocking from side to side. As I lowered my hands I began to observe the smoke and I realized that there must have been an explosion. [376]

Q. (By Mr. Vartan): Were you finished, Mr. Caldwell?      A. That's right.

Q. Then am I correct that you ran towards the main dock, that would be in a southerly direction?

A. No, from that position I observed the falling debris that was hitting me and smaller pieces and larger pieces falling on either side, and my first attempt was to get out of the falling debris, pieces of the boat were coming down all around. And I moved from that position to between the gasoline and diesel tanks to take cover from the debris coming. I then run from there to the center of the railroad tracks

(Testimony of Charles Herbert Caldwell.)

on the approach and made my way toward the office, to the south.

Q. That would be the main office?

A. The main office.

Q. All right. On your way to the main office did you observe the crew of the Santa Lucia getting off of the stern of the Santa Lucia and falling into a large skiff—or pulling a large skiff up?

A. Yes, I did.

Q. At any time, Mr. Caldwell, when you saw the men on the Santa Lucia with the skiff there was no fire around or on the stern of that vessel, isn't that true?

A. I didn't observe any.

Q. You received flash burns on your face, did you not? [377]

A. Yes, sir.

Q. Mr. Caldwell, let me ask you if someone tied up to your fueling station and asked for thirty gallons of gasoline, was it not your duty to see that he got thirty gallons of gasoline?

A. Yes, sir.

Q. Well, now, if someone tied up to the gas dock and asked for about thirty gallons of gasoline, or approximately thirty gallons of gasoline, it would be your duty to inform him when approximately thirty gallons of gasoline had been delivered?

The Court: Counsel, I don't know what the purpose of this questioning is. If you mean it is part of his duty in respect to his employer, that's one question; you may ask whether he was so instructed and whether according to the rules of his company—

Mr. Vartan: Oh, I see.

The Court: But as to whether or not there was,

(Testimony of Charles Herbert Caldwell.)

under the circumstances, a duty which he owed to the Santa Lucia——

Mr. Vartan: I get it.

The Court: ——is a matter of law for the Court to determine, not for this witness to give his opinion on.

Mr. Vartan: Yes, your Honor.

The Court: Even though it may be very helpful. I don't know. [378]

Mr. Vartan: Very well, your Honor.

The Court: You may ask him what his instructions were with respect to this matter from his company, you may ask him what his practice was.

Mr. Vartan: All right. Well, we will start over so that we——

The Court: When you speak of duty, you speak of legal obligations.

Mr. Vartan: Yes, I realize that, your Honor. Thank you. [378-A]

Q. (By Mr. Vartan): Mr. Caldwell, I would like to ask you a few questions over again in accordance with his Honor's suggestion incorporated.

Did your employer instruct you, prior to the day of this accident that if somebody tied up at the fueling station and asked for 30 gallons of gasoline that you were to see that he was to get 30 gallons of gasoline? A. More or less, yes.

Q. Did your company instruct you prior to the day of this accident that if somebody came up and asked for approximately or about 30 gallons of gasoline, that you should inform the customer when

(Testimony of Charles Herbert Caldwell.)

approximately or about 30 gallons of gasoline had been delivered?      A. No, sir.

The Court: You were instructed to sell as many gallons of gasoline as you could get paid for or the company could collect for?

The Witness: We were to deliver whatever they wanted with their instructions.

Q. (By Mr. Vartan): Now, calling your attention to the same deposition, page 35, line 7:

“Question: Sure. Isn’t it correct that part of your duties at the time we are talking [379] about where someone asked for approximately 30 gallons of gas, to inform him when the approximately 30 gallons of gas had been delivered?

“Answer: If he asked for it in that respect, yes, I would. In this case, he didn’t.”

Now, did you give that answer to that question?

A. I believe that is correct, I said that, and I also clarified myself later on, in the deposition.

Q. Your attorney will call your attention, I am sure, to any clarification. But I want to know now if it isn’t a fact that your instructions and your custom and habit on that dock was that if a customer asked for approximately 30 gallons of gasoline, it was your duty to inform him when the approximately 30 gallons had been delivered?

Mr. Nave: Object to that, if the Court please——

Mr. Vartan: That is the crux of our case, your Honor.



(Testimony of Charles Herbert Caldwell.)

The Court: That may be the crux of it, that is your legal contention.

Mr. Vartan: No, I mean counsel objects—I am sorry, I withdraw my remarks.

Mr. Nave: Calling for a conclusion of the witness.

The Court: Objection sustained.

Now, you may ask him that question, since this is an admiralty suit, so that you may have it on the record in the [380] event there is an appeal to the appellate court, so they may have the answer on the record; be no need for a new trial.

Mr. Vartan: Yes. I think, your Honor, that we already covered the subject by reading his answer in the deposition, but following your Honor's suggestion:

Q. (By Mr. Vartan): I will ask you, Mr. Caldwell, if it isn't true that on the day in question, that part of your duties under the instructions of your company was that where someone asked for approximately or about 30 gallons of gas, to inform the customer when approximately or about 30 gallons of gas had been delivered. Wasn't it your duty to tell them?      A. No, sir, it was not.

Q. Then the answer which you gave in your deposition is not true?

Mr. Nave: Objected to——

The Court: Objection sustained.

Mr. Nave: Being argumentative.

Q. (By Mr. Vartan): Would you like to correct your answer given in your deposition?

(Testimony of Charles Herbert Caldwell.)

The Court: Objection sustained, the Court's own objection.

Q. (By Mr. Vartan): Did you, Mr. Caldwell, in this instance, advise Mr. [381] Cardinale, the customer, that he had taken approximately 30 gallons of gasoline when the meter read approximately 30 gallons? A. No, sir.

Mr. Vartan: Your Honor, may we have a recess at this point?

The Court: Yes, how long do you want?

Mr. Vartan: Ten minutes.

The Court: All right. A ten-minute recess.

(Short recess.)

The Court: All right.

Mr. Vartan: I don't have too many questions.

The Court: Take as long as you want, counsel.

Mr. Vartan: I don't want to disconcert your Honor.

The Court: A very important witness.

Q. (By Mr. Vartan): Mr. Caldwell, you knew from training by the company and your experience that introducing gasoline beyond the capacity of a tank involved a hazard, did you not?

A. Yes, sir.

Q. You knew that introducing gasoline beyond the capacity of a tank would be a fire hazard, did you not?

Mr. Nave: Object to that as being argumentative.

Mr. Vartan: I am asking for his knowledge.

(Testimony of Charles Herbert Caldwell.)

The Court: Overruled. You may answer.

Q. (By Mr. Vartan): [382] Did you not?

A. If he had spillage on the deck, yes, it would be a fire hazard.

The Court: Did you know the capacity of this tank?

The Witness: No, sir.

Q. (By Mr. Vartan): Mr. Caldwell, earlier in my examination, didn't you say that Mr. Cardinale told you that she will take 30 gallons?

A. No, sir, I did not.

Q. Well, reading from the statement——

The Court: There is such a statement in there, but you see, counsel, you put a construction on that that doesn't necessarily follow. Because a tank will take 30 gallons, doesn't mean that is the capacity of the tank. I may have a bigger tank; I may drive up to a gasoline station with my car and say I will take five, maybe because that's all the money I have in my pocket to pay for it at that moment.

Mr. Vartan: Well, may I ask the witness, your Honor?

The Court: Certainly, go ahead.

Q. (By Mr. Vartan): I will read from your statement.

"He replied that she will take about 30 gallons." Did he make that statement to you that "She will take about 30 gallons"? A. Yes, sir. [383]

Mr. Nave: Objected to as asked and answered.

The Court: He has answered it.

Mr. Vartan: He has denied it.

(Testimony of Charles Herbert Caldwell.)

The Court: Did you make that statement?

The Witness: Yes, sir, I did.

The Court: In writing.

Q. (By Mr. Vartan): Now, in addition to the hazards that you have just testified to, introducing more gasoline than the capacity of the tank you knew could rupture a tank, didn't you?

A. No, sir, I did not.

Q. Calling your attention, counsel, to page 50, line 14—I will have to go back to the question, Mr. Nave, page 49, line 26:

“And you knew that there were certain hazards involved in introducing gasoline beyond the capacity of the tank to receive it, isn't that right?”

Down to line 14:

“What would the hazard be?”

“Answer: Fire hazard, rupturing the tank.”

Did you give that answer to that question?

A. Yes, sir, I did. I also clarified that statement later in my deposition.

Q. Well, Mr. Nave will call that to your attention, I am [384] sure.

And you also knew on this day that another hazard from the same practice would be an explosion, or could be an explosion, did you not?

A. It's possible.

Q. Mr. Caldwell, you also sold diesel oil from this gasoline dock, did you not? A. Yes, sir.

Q. Did you personally handle those sales?

A. Yes, sir.



(Testimony of Charles Herbert Caldwell.)

Q. Those sales of diesel oil were also made to fishing vessels?      A. Correct.

Q. I assume, Mr. Caldwell, that separate hoses were involved for diesel?      A. Yes, sir.

Q. And I assume the same type of nozzle was involved?      A. Yes, sir.

Q. In other words, the same nozzle that was on this gas hose that was used here, was used for the diesel, isn't that right?      A. No, sir.

Q. I thought you just said yes, sir.

A. You said the same nozzle.

Q. No, the same type, I'm sorry. [385]

A. The same type, yes.

Q. The same type as far as operation is concerned of the nozzle, isn't that right?

A. Yes.

Q. And in answer to his Honor's question, you said that the type of nozzle that was involved on the gas hose was the kind that you hold your hand to press the handle and the liquid would flow?

A. Right; correct.

Q. He could release the handle, the flow would stop, is that right?      A. Yes, sir.

Q. And that handle was on a spring, was it not? In other words, it was a spring action?

A. It was spring loaded.

Q. All right. Mr. Caldwell, fishing vessels would carry diesel fuel tanks up to 3,000 gallons, would they not, fishing vessels that you had sold to?

A. Yes, I have sold up to that capacity.

(Testimony of Charles Herbert Caldwell.)

Q. That has been on many occasions that you have sold diesel fuel to fishing vessels up to 3,000-gallon capacity tanks? Is that right?

A. Let's say some occasions.

Q. Some occasions. All right. Did the diesel delivery on that gas dock also involve gravity [386] flow?

A. Yes, sir.

Q. Does diesel fuel flow faster or slower than gasoline?

A. As to our landing, it flows faster.

Q. It flows faster. How many times faster, just your best judgment?

Mr. Nave: Object to that as being immaterial.

The Court: I don't know. I suppose he has a purpose in it.

Mr. Vartan: I have a purpose.

The Court: Objection overruled.

The Witness: Possibly twice as fast.

Q. (By Mr. Vartan): All right.

A. I don't know.

Q. Now, you have testified earlier that 30 gallons of gasoline, the delivery of 30 gallons of gasoline would involve five to ten minutes, depending on the supply in the storage tank, isn't that right?

A. That's right.

Q. Is it your testimony, Mr. Caldwell, that in delivering diesel, 3,000 gallons of diesel fuel, that a man would stand at this nozzle, the same type as the gasoline nozzle, hold his hand compressed, while 3,000 gallons of diesel fuel were being delivered?

A. It's possible. [387]

(Testimony of Charles Herbert Caldwell.)

Q. What was the practice? Does that happen at your gas dock?

Mr. Nave: If the Court please, I fail to see the relevancy, and I object as immaterial.

The Court: Overruled.

Q. (By Mr. Vartan): Please answer.

A. Yes, it was.

Q. Now, if 30 gallons of gasoline took five to ten minutes, and the diesel flowed twice as fast, then it would take two and a half—ten minutes for 30 gallons, 3,000 gallons would take some hours to deliver, wouldn't it?

The Court: That is a question of mathematics; don't you think I am competent to solve my own mathematical problems, if it becomes necessary to do so?

Mr. Vartan: Very well.

Q. (By Mr. Vartan): How long would it take to deliver 3,000 gallons of diesel fuel ordinarily?

The Court: I don't see how this is material, counsel.

Mr. Vartan: Your Honor——

The Court: I am giving you considerable leeway, but no claim has been made that diesel was purchased or delivered to this vessel. [388]

Mr. Vartan: May I state my position, your Honor?

The Court: If you feel you have something definite in this, go ahead. I don't want you to disclose your purpose, because sometimes compelling you to

(Testimony of Charles Herbert Caldwell.)

do that in the course of examination, defeats the very purpose you have in mind.

Go ahead.

Q. (By Mr. Vartan): How long would it take ordinarily to deliver 3,000 gallons of diesel fuel at that sales dock?

A. It has been several years since I worked there now, but it was in excess of an hour.

Q. Excess of an hour. And during the delivery that took one hour, using the same type of nozzle, the type that you have to hold your hand up, is it your testimony that the man on the vessel would stand there for one hour and hold his hand compressed while taking one-hour's delivery of diesel?

A. Yes.

Q. Is it your testimony that the nozzle was never locked into place at the sales dock during such a long delivery of gasoline—I mean of diesel?

A. I never locked the nozzle open, no.

Q. Did you ever observe the fishing men down on the deck do that?

A. I have observed fishermen doing it, yes.

Q. As a matter of fact, that was a common practice during [389] the time that you worked there, that when there was going to be a delivery of fuel which would last an hour or two, even, that they would lock the nozzle and walk away and they wouldn't stay there and hold their hand with their muscles compressed for one hour, would they?

The Court: I don't see what that has to do with this case?

(Testimony of Charles Herbert Caldwell.)

Mr. Vartan: Well, I will tell you, your Honor.

The Court: I know, but if you have any evidence that this man Cardinale tied this lever down and walked away and let the gas flow, produce some witnesses.

Mr. Vartan: Unfortunately——

The Court: We have no witness to that effect?

Mr. Vartan: That's right, your Honor. We are dealing here with a situation where——

The Court: We are dealing here with a case where you are depending upon circumstantial evidence.

Mr. Vartan: That's right.

The Court: But proof of circumstances doesn't mean conjectures based upon the operation of the imagination.

Mr. Vartan: No, that's right, your Honor. The point we make, your Honor, is there is a claim here, which, frankly, to the Court, and representing these seamen, we seriously doubt. There is a nozzle here of the type they mentioned, that had to be held tight against the spring pressure [390] —all right, now——

The Court: Go ahead. I will give you great leeway in going into this, but if you have any testimony or have anything that bears upon the type of nozzle that was used here, please bring it in.

Mr. Vartan: All we can do is show all the circumstances we know.

The Court: All right. You go ahead, then, and take your time.



(Testimony of Charles Herbert Caldwell.)

Mr. Vartan: All right.

Q. (By Mr. Vartan): Then from past experience you do know that in some cases the men on the vessel at the other end of the hose would lock the nozzle and wouldn't have to hold it during the fueling operation. You did know that?

A. That is what I said, yes.

Q. All right. Then after a minute or two of conversation with Mr. Cardinale, you didn't see whether he remained at this fill pipe constantly or not; you don't know that, do you, of your own knowledge?

A. To the best of my ability, I believe he stayed at the fill spout the full time. I saw him there several times.

Mr. Vartan: I make a motion to strike that as nonresponsive.

The Court: I think it is responsive. He says he [391] saw him there several times and he believes he stayed there, based upon his observation.

Mr. Vartan: All right.

Q. (By Mr. Vartan): Now, in answer to his Honor's questions about your previous experience in selling gasoline to fishing vessels, is it your testimony that you sold gasoline to fishing vessels on previous occasions, as you told his Honor?

A. Yes, sir.

Q. Page 23-A, line 20, counsel.

"Question: Have you, on occasions in the past, given gasoline fuel to fishing vessels of the same type of the Santa Lucia?

(Testimony of Charles Herbert Caldwell.)

“Answer: I don’t remember that. Mostly they were diesel-powered boats and they would require diesel fuel.”

Did you give that answer to that question? Yes or no, please.

A. The answer is yes. May I qualify it?

Q. Yes.

A. Many times these vessels, if they wanted gasoline, would come over in a skiff or some other means and get five gallons of gas. And in that respect I have given them gas before. On occasions I have given a small quantity of gas, maybe five gallons, if they took on a hundred or two hundred gallons of diesel. [392]

Q. Had you ever given gasoline fuel in the manner that was done in this case to fishing vessels of the type of the Santa Lucia, prior to September 28, 1954?

A. I don’t recall that.

Q. You don’t recall? A. No.

Q. So when you answered his Honor’s question that some gasoline tanks were 100 and some were 200, you had no experience to base that on, isn’t that true?

A. Your question is confusing.

Q. Well, you tell us in what respect it is confusing.

A. As I told his Honor, there are many types of boats and that is what we were speaking of, and some of them could carry, as an auxiliary engine, could carry 100 gallons of gasoline. I had no idea what this vessel carried, or its capacity.

(Testimony of Charles Herbert Caldwell.)

Q. Well, I will ask you again: Prior to September 28, 1954, you don't remember delivering gasoline to a fishing vessel, any fishing vessel, of the type of the Santa Lucia, do you?

A. Very little, if any, yes.

Q. So when you were talking about 100 gallons, 200 gallons, depending upon the type of fish they were going for, you were not basing that on any previous experience, were you, Mr. Caldwell?

A. Yes, sir, I was.

Mr. Nave: Your Honor, I object to that.

The Court: Overruled. [393]

Mr. Vartan: Well, he answered. I have no further questions.

#### Cross-Examination

By Mr. Nave:

Q. Mr. Caldwell, counsel has read a portion of your deposition that was taken by them on September 23, 1955. I am going to read you some additional questions that were asked you and some additional answers that you gave that were not read to you by counsel, and ask you to state whether or not these questions were asked you and you gave these answers.

Counsel ask you, on page 48, the question he read to you, and the answer which you gave as follows:

“Well, you knew, on the basis of your past experience, that the custom was to request gasoline for an auxiliary tank enough to fill the tank, isn't that correct?”



(Testimony of Charles Herbert Caldwell.)

You said, "Well, yes, he would request enough to fill his tank."

I will ask you, then, if the following questions and answers following that were not asked.

"Question: You knew this on the basis of your past experience and custom there, is that a fair statement?

"Answer: Well, the man usually estimates what he thinks he is going to take. Now, this quite often varies for various reasons." [394]

Did you make that answer to that question?

A. Yes, sir.

Q. The next question:

"Question: That is right, it varies, for one thing, according to the capacity of the tank."

You answered:

"And whatever lines he may have left open as to filling other tanks. If the man says he wanted exactly 30, I would have shut him off at 30, but where he didn't, I went about my business, expecting him to shut his own tank off when he was full."

You gave that answer, didn't you, Mr. Caldwell?

A. Yes, sir.

Q. Page 51 of this deposition, Mr. Caldwell, these questions and answers in your deposition, I will ask you if you answered these questions as follows:

"Question: Mr. Caldwell, what normally happens if someone overfills a tank, it is spilled off the top of the tank, doesn't it?

"Answer: A tank properly installed will over-

(Testimony of Charles Herbert Caldwell.)

flow the tank and show signs of spilling on the deck”

You gave that answer, did you, sir? [395]

A. Yes, sir.

“That would be the normal thing that would happen?”

“Answer: That would be the time to be aware of a fire hazard.”

You gave that answer to that question?

A. Yes, I did.

“Question: And you testified, I believe, if I am correct, that there was no spillage on the deck in question?”

“Answer: No spillage.”

That question was asked and you gave that answer? A. Yes, sir.

Q. And the question following that:

“Question: No gasoline dropped on the deck?”

You answered: “No, sir.”

That’s correct, isn’t it, sir?

A. Yes, it is.

Q. On page 43, counsel, beginning on line 6, counsel asked you these questions and you gave these answers at this deposition:

“Question: Now, you were not acquainted, as I understand your testimony, with whether or not the Santa Lucia had two or more gasoline tanks aboard?”

To which you answered: [396]

“I have no idea of how many tanks she had.”

That’s your testimony? A. That is true.

(Testimony of Charles Herbert Caldwell.)

“Question: You are not acquainted with whether or not there was an overflow on any of the gasoline tanks aboard?”

You answered: “I saw no gas spilled at all.”

A. That’s true.

Q. That’s your testimony?

“Question: And you were not acquainted with whether or not there was a flow pipe between two or more tanks in the vessel in question?”

To which you answered: “No, sir, I don’t know if she had more tanks than one or not.”

Is that your answer, sir? A. Yes, it is.

Q. And following that there is a question:

“Question: Now, in reference to the amount of storage capacity on these various vessels of the approximate size of the Santa Lucia as to Diesel fuel, what range in gallonage was customary in vessels of that size as to Diesel fuel storage?”

To which you answered: “Oh, they may, I have filled them as much as 1500, 1800 gallons. I imagine they will hold up between two or three thousand gallons.” [397] You gave that answer to that question, sir? A. Yes, it is.

Q. Next question following that:

“Question: Now, when a vessel comes into this sales dock for the purpose of taking on fuel, is it your practice to rely on the man who is fueling the vessel with the hand hose to turn it off and on and off at the point of delivery, is that not true?”

Mr. Vartan: Just a minute, we will object to

(Testimony of Charles Herbert Caldwell.)

that. On a lot of these questions it is hard to determine——

The Court: Yes, the objection is sustained. What his practice was—he might have been consistently negligent. It is immaterial.

Mr. Nave: Do I understand, your Honor, that——

The Court: I don't say that he was negligent. It impresses me as I have indicated, a very truthful, sincere, honest young man.

Mr. Nave: Yes. What I mean, your Honor is there an objection to me reading a particular question and answer?

The Court: He objects to this as being immaterial.

Mr. Nave: Oh, being immaterial. I see, your Honor.

The Court: That is the essential objection, isn't it, counsel?

Mr. Bartan: Yes, your Honor. What his [398] practice was is certainly not binding on the seamen.

The Court: Unless it was his practice with this same man.

Mr. Vartan: That's right.

Mr. Nave: Very well.

The Court: He says he doesn't remember—as I recall your testimony, you don't remember servicing this ship before at all, do you?

The Witness: Not for gasoline.

The Court: Not for gasoline.

Q. (By Mr. Nave): Now, on page 46, I will ask

(Testimony of Charles Herbert Caldwell.)

you if these questions and answers were not in your deposition.

“Question:” —beginning on line 20—“You were not concerned whether it is a cash sale or not, it is your custom, is it not, to rely on that person to determine the amount of fuel he wants by regulating himself at the point of a hand control on the vessel?”

Mr. Vartan: Same objection, your Honor.

The Court: Sustained. It is immaterial.

Mr. Nave: On page 47.

The Court: You can show that that is the general custom in the trade and recognized way of doing this, throughout that area. That is another [399] point.

Mr. Nave: The purpose of this, your Honor, was they read excerpts from the deposition and this is an explanation of the answers he was giving. That is the only purpose of this line of inquiry.

The Court: If that is the only purpose, the objection is sustained.

Q. (By Mr. Nave): Mr. Caldwell, do you smoke?      A. No, sir.

Q. Did you ever smoke, use cigarettes or tobacco?

A. Today, no, sir.

Q. Did you use it at the time you were working at Union Oil?      A. No, sir.

The Court: Did you observe anybody aboard the ship smoking?

The Witness: No, sir, I did not.

The Court: Did you observe anybody on the dock



(Testimony of Charles Herbert Caldwell.)  
smoking at the time you were loading or unloading gasoline?

The Witness: I was the only one on the dock in that area.

The Court: Did you observe any odor of cooking coming from the vessel?

The Witness: No, sir.

The Court: All right. [400]

Q. (By Mr. Nave): Mr. Caldwell, I hand you a gasoline hose and nozzle which is in evidence in another case in which you testified. Now, I will ask you first if you will state whether or not this hose that is on this nozzle is the same type and kind of gasoline hose that was used on the hose reel on the day of this explosion?

A. Yes, sir, that looks similar.

Q. I will ask you to examine the nozzle, the fill nozzle, and the lever on the same, and will you state whether or not this is representative of the type of nozzle and control that was being used on the day of the filling of this fishing boat?

Mr. Vartan: Just a minute. We will object to that, your Honor, as——

The Court: Overruled; he may answer.

The Witness: This is similar with one exception

Q. (By Mr. Nave): All right, what is the exception?

A. The one we used on that day had a changeable tip on the end of it; you can either put on a large spout or a small one. It was threaded.

(Testimony of Charles Herbert Caldwell.)

The Court: Outside of that one difference, is this apparatus you hold in your hand now similar in design and construction and size, relative size, as the nozzle at the end of the hose that you handed down to the ship?

The Witness: Very similar, yes, sir. [401]

Q. (By Mr. Nave): Now, the mechanism there——

The Court: Do you offer it in evidence?

Mr. Nave: Yes, your Honor.

Mr. Silvers: May I have a question on voir dire, your Honor, before ruling on that?

The Court: Yes.

#### Voir Dire Examination

Mr. Silvers: You stated that the hose, as distinguished from the nozzle, was similar to the one that was used in our case. Is it different in any respect?

The Witness: To my knowledge, it is not different at all.

The Court: You mean from your observation?

The Witness: My observations.

Mr. Silvers: Didn't you speak about a wire?

The Witness: Yes, sir.

Mr. Silvers: With relation to the hose that was actually used at the time of this accident?

The Witness: I was referring to the wires you can see on the end there, the reinforcing wire.

Mr. Silvers: You mean right here?

(Testimony of Charles Herbert Caldwell.)

The Witness: Yes, sir.

Mr. Silvers: That is the wire you had reference to?

The Witness: Yes, sir.

The Court: That is woven into the fabric of the [402] hose itself?

The Witness: Correct.

Mr. Silvers: The spring mechanism of the nozzle part of the apparatus you cannot distinguish in any important respect from the one that was on the gas hose now, is that correct?

The Witness: From all appearances, it is the same.

Mr. Silvers: I have no further questions.

The Court: We will receive this article in evidence solely for the purpose of illustration, to demonstrate the mechanism in a general way to the Court.

Mr. Vartan: On behalf of the seamen, the Libelants here, we wish the record to show the objection to this nozzle upon the grounds it isn't the best evidence. This being a seamen's case, if I get out of line, your Honor, I want you to tell me, but I am going to speak frankly——

The Court: You go ahead and don't worry about getting out of line. You have the objection you feel is necessary for the protection of your clients' interests.

Mr. Vartan: All right.

The Court: And make no apologies for doing so



(Testimony of Charles Herbert Caldwell.)

Mr. Vartan: All right.

The Court: I would be very much offended if you refrained from doing it.

Mr. Vartan: Very well, your Honor. Our objection [403] is your Honor, that the record in this case will show that a diver was hired by these people while my clients, or our clients were in the hospital, within hours. We will show that eventually the record will show in this case, we don't want this thing to come in now and suffer later, that the water depth right off the gas dock is not too deep. There was a fire, of course, and the hose probably burned, and this gadget, the nozzle, would fall right smack under the gas reel and could be found and brought into court.

Upon that reason, it is not the best evidence and no foundation has been laid to bring this in and say it is the same type and just slough it off. We object on behalf of the crewmen.

Mr. Nave: I would like the record to show, if your Honor please, that I resent the imputations of counsel that we have something in our possession that is not produced here. We do not. I will make the avowal that we do not have in our possession any hose or nozzle that was recovered after this fire at all, and none such is in the possession of my clients or known to me. I think it is a very unfair statement, your Honor, and I certainly——

The Court: I don't think counsel intends to reflect upon your integrity.

Mr. Vartan: No.

(Testimony of Charles Herbert Caldwell.)

The Court: However, the objection is [404] overruled. The Court understands this is not the identical nozzle that was used at the time of the delivery of the gasoline to the ship, in truth, but it is received only for purposes of demonstration, to illustrate to the Court the type, the general type of nozzle then used.

The objection is overruled. You will have an exception to my ruling.

I will now interrogate you specifically, Mr. Nave.

Was the original nozzle recovered by your clients, to your knowledge?

Mr. Nave: To my knowledge it was not, your Honor.

The Court: I have a question to ask you, sir. Did you make an application for the production of anything recovered by the divers from the waters around the dock?

Mr. Vartan: No, your Honor, for the reason——

The Court: Did you at any time examine or take the deposition of any of the officers of this defendant corporation to ascertain whether or not the original nozzle was secured?

Mr. Vartan: Depositions were taken and statements from an employee of Union Oil Company was furnished to us which states that a diver had been employed, but stated that the diving took place at a place other than under the hose reel where this original nozzle would be found. That's our position.

The Court: Do you want to bring the diver in here [405] as a witness to the Court?

(Testimony of Charles Herbert Caldwell.)

Mr. Vartan: Well, I don't feel that it is our——

The Court: I say, do you? If you do, I will require the Respondent to give you the name and address of the diver.

Mr. Vartan: Yes, we would like that on rebuttal.

Mr. Nave: I would be very pleased to get the name.

Do you have the name of the diver, Mr. Hill? Will you give counsel the name and address of the diver?

Mr. Vartan: He is their employee; I assume they will produce him.

The Court: If he is in the employ of the company, you will produce him, of course.

Mr. Nave: I don't believe he is a man in the employ of our company. It is my understanding that following this, a diver, an independent person, was asked to go down and see if they could salvage something, and he was unable to find anything, and he didn't salvage anything. Now, this man is not a Union Oil employee, as the counsel has inferred, as I understand it.

The Court: Let's proceed now. Any further questions of this witness?

Mr. Nave: Yes, your Honor.

(Testimony of Charles Herbert Caldwell.)

Cross-Examination

(Continued)

By Mr. Nave:

Q. Now this mechanism, Mr. Caldwell, to turn on the flow [406] of gasoline at this end, you depress the lever or pull the lever up? A. Yes, sir.

Q. Is that right? A. That's correct.

Q. And when you release it, what happens?

A. It closes itself.

Q. And no more gasoline flows out?

A. That's correct.

Q. Now, the nozzle, the actual nozzle that was used in the fueling operation on the Santa Lucia by Mr. Cardinale, is similar as to metal and general design as the one we have in our hand here?

A. Yes, sir, it is.

Q. There is a difference, you stated, I believe, that there was a thread, so that it could be changed as to size of the nozzles? A. Correct.

Q. How about the size of this particular nozzle that is on this exhibit, is that larger or smaller than the one used in the fueling operation?

A. The one we were using that day was smaller.

Q. Do you know the approximate size of the one that was used that day?

A. Oh, half inch, five-eighths of an inch inside diameter. [407]

Q. Now, Mr. Caldwell, before this explosion, did you at any time see any fire anywhere on this dock?

A. No, sir.

(Testimony of Charles Herbert Caldwell.)

Q. Did you before this explosion at any time see any gasoline on your dock running loose or flowing or dripping? A. No, sir.

Q. Did you at any time before this explosion see any fire aboard the fishing boat Santa Lucia?

A. No, sir.

Q. Did you before this accident, explosion, rather, at any time see any spillage of gasoline on the deck of the fishing boat Santa Lucia?

A. No, sir, I did not.

Q. Now, in the equipment in the office on the service station of the Union Oil Terminal there, there are electric wires, are there not?

A. Yes, sir.

Q. And those electric wires are—how are they encased, if they are incased?

A. All wire is run in conduit.

Q. I believe you have testified, on the examination of counsel, that you know of no leakage or spillage of fuel or gasoline at any time, not only on the occasion of this explosion, but prior thereto, on the marine service dock?

A. No, sir, I know of none. [408]

Q. Now, when you left the rail after you told the Court that you had this sudden flash in your face, did you receive any injuries yourself as a result of that explosion? A. Yes, sir.

Q. Will you tell the Court just what happened to you in the explosion, flash and explosion?

A. Well, my eyes were stinging very much, my hair was burnt back, I had a flash burn about my



(Testimony of Charles Herbert Caldwell.)

face, bruises, I was pretty well shaken up, state of shock.

Q. At the moment of the flash, where were you facing?

A. I was looking at Mr. Cardinale on the deck of his boat.

Q. Now, after the explosion, the flash and explosion, did you examine yourself, your face, or any part of yourself, to see if there were any material, any debris imbedded in your hair or your face at any place?

A. Yes, there was quite a bit of some black substance imbedded in my hair, and in my eyes, and my face appeared like it was peppered with a shotgun, little pieces of tar buried in my skin.

Q. You stated that following this flash, as you were facing Mr. Cardinale, that you had the sensation of debris falling on you?

A. Yes, sir.

Q. Is that right, sir?

A. Yes, sir. [409]

Q. Were you able to ascertain what type of debris was falling on you at that time, following the explosion?

A. They appeared to be pieces of the boat were coming down. I noticed one large piece that came down on the opposite side of the wharf from where I was standing.

Q. Now, Mr. Caldwell, the marine dock side—you can just turn around here, if you will, please, and call your attention to a photograph that is marked Respondent's Exhibit B, the picture that

(Testimony of Charles Herbert Caldwell.)

was taken following this explosion of the marine service station, the piling side there.

I call your attention to two objects on the side of the deck, or dock here, that appear to be some type of signs.           A. Yes, sir.

Q. Do you know what those signs are, what they were, what they represent?

A. One had instructions for tying up and the other one had a warning to customers to shut off their engines and turn out all open lights, no smoking.

Q. Were those signs in place as shown on this exhibit, Respondent's Exhibit B, at the time that Mr. Cardinale and the fishing boat Santa Lucia came in to purchase the gasoline?

A. Yes, sir, they were.

Q. Now, following the flash explosion, you left the scene of the explosion, did you not? [410]

A. Yes, sir.

Q. Where did you go immediately after leaving the service station area?

A. I made my way south down the wharf to the foreman's office.

Q. Now, on your way to the foreman's office, did you encounter a young man named Garrett Ray?           A. I don't know, sir.

Q. You don't recall. You don't remember whether you talked to anyone or saw anyone, or not, is that right?

A. I saw two men coming up from the launch, from our launch landing, and they appeared to be

(Testimony of Charles Herbert Caldwell.)

all wet. I can remember that as I passed them. I next met Mr. Johnson, the wharf foreman, and I met him about where the tanker Lompoc was tied up.

Q. That is back in the area of the change room or office as shown on the sketch, shown on that map?

A. In this area here (indicating on map).

Q. Before you get on the south end of the dock here, the dock widens out in the area where the Lompoc was berthed, is that right?

A. Yes, that is the main dock.

Q. Now, following your going to that point, did you remain in the area, or did you leave the area?

A. I continued on south to the office and I heard Mr. Johnson—— [411]

Q. You don't have to recite any conversation, just what did you do?

A. I went to the foreman's office and called the engineer at Avila station.

Q. Then where did you go after that?

A. Then I returned down to the wharf, to the scene of the fire, and tried to help some of the fire fighters unreel some hoses. And I realized I was in such a state of shock, I couldn't help them, and I wasn't any use to myself. So I asked Mr. Johnson's permission to go through the fire area and continue on down the wharf, which he told me I could.

And I ran through the fire area and on down the other end of the wharf.

(Testimony of Charles Herbert Caldwell.)

Mr. Nave: I have no further questions at this time, your Honor.

The Court: That may go in evidence.

The Clerk: Union Oil Company's Exhibit J introduced and filed into evidence.

(Whereupon, the hose and nozzle previously referred to was received in evidence as Respondent Union Oil Company's Exhibit J.)

Cross-Examination

By Mr. Silvers:

Q. Mr. Caldwell, I am going to show you a number of photographs which you have seen before, I believe, and I would like [412] to ask you if they represent correctly the scenes of the gas dock following this explosion, with several showing close-ups of the pilings on the side and under the deck of the dock. Would you look at them, please, and see if that is what they represent?

A. All right.

Q. Is that what they represent?

A. Some of them do, yes.

Q. Well, is there any photograph here that does not represent a scene of the gas dock after the explosion or a close-up of the pilings after the explosions?

A. You said planking and pilings; this is obviously just the wreckage of the gas dock.

The Court: Are they photographs of the dock and vicinity?

The Witness: Yes, they are.

(Testimony of Charles Herbert Caldwell.)

The Court: Following the explosion.

The Witness: Yes, sir.

Mr. Silvers: May we offer these in evidence, your Honor?

The Court: Any objections?

Mr. Silvers: As Respondent Cardinale's next in order.

Mr. Nave: I have no objection, your Honor.

The Court: Received in evidence. [413]

The Court: Respondent Cardinale's Exhibit K introduced and filed into evidence.

(Whereupon, the photographs previously referred to were received in evidence as Respondent Cardinale's Exhibit K.)

Q. (By Mr. Silvers): We have made reference to the statement which you signed, Mr. Caldwell, which is in evidence as Libelant's Exhibit—I don't know the number offhand—do you have that, your Honor?

The Court: Libelant's Exhibit No. 11.

Mr. Silvers: I have copies of it.

Q. (By Mr. Silvers): I notice that your signature on that document is dated November 3, 1954, this accident occurring on September 28, 1954. Did you sign this on November 3, 1954?

A. Yes, sir.

Q. Did you sign this in the presence of Mr. Hill, the fire supervisor for Union Oil, who has been here in court?

A. I don't remember that.



(Testimony of Charles Herbert Caldwell.)

Q. Do you remember where you signed it?

Mr. Nave: If the Court please, I object to that as immaterial.

The Court: Overruled.

Q. (By Mr. Silvers): Do you remember where you signed it, Mr. Caldwell? [414]

A. I believe I was at work on the wharf.

Q. Was that the first time on November 3, 1954, that you made any statement to your company about this fire and explosion?

A. This was a signature of the final draft.

Q. Will you try to answer my question? I will ask it again. Was that the first time you had made any statement to your company concerning this fire and explosion?

A. This is the only statement I made to my company.

Q. You made it for the first time on November 3, or did you make it on a prior date?

A. I am trying to think. This must be the time that I made the statement to the company, November 3rd.

Q. You just said a moment ago this was the final draft. What did you mean by that?

A. Well, my signature was signed on the final draft.

The Court: Did you draw a preliminary draft of this?

The Witness: Yes, sir.

The Court: Did you write that out in your own handwriting, or typewrite it?

(Testimony of Charles Herbert Caldwell.)

The Witness: I made a statement and others wrote down what I had to say. Then I surveyed it and made any corrections I saw fit, so that it was——

The Court: This is your correction of what somebody wrote down purporting to record what you told them? [415]

The Witness: Yes, sir.

Q. (By Mr. Silvers): The words, then, that are used in this statement are not yours, but words that you have approved?

A. I signed the statement as being my own words.

Q. Were they? A. Yes, sir, they are.

Q. You actually wrote or told to someone the words that make up this statement, this typewritten statement, is that your testimony?

A. That's right.

Q. Do you remember to whom the statements were made? A. Mr. Hill.

The Court: Who is Mr. Hill?

Mr. Silvers: Mr. Hill is here.

The Court: No, the witness, ask the witness. Who is Mr. Hill?

The Witness: The safety supervisor for the Union Oil Company.

Q. (By Mr. Silvers): When did you first talk to him about this accident and explosion?

Mr. Nave: Your Honor, I want to object again as being immaterial.

The Court: Overruled. [416]

(Testimony of Charles Herbert Caldwell.)

The Witness: I believe it was on the date I made this statement.

Q. (By Mr. Silvers): Is it your testimony you did not speak to the fire supervisor, Mr. Hill, of Union Oil, until November 3, 1954, concerning this fire and explosion? A. 28, 29, 30.

Q. This is the 3rd of November, Mr. Caldwell, not October. A. Oh, heavens.

Q. This is a month and some three days, a month and a week, approximately, after the explosion.

A. I seem to have made some mistake. Could I correct myself?

The Court: Yes, certainly.

The Witness: This statement I made was made within a week after the explosion and fire happened, and I must have signed it at a later date, then. I mean, it bears the date on the day I signed it.

The Court: Did you sign any other statements?

The Witness: No, sir.

The Court: In connection with this accident at any time for anybody?

The Witness: No, sir, I made one statement to the Coast Guard and one to the Union Oil Company.

The Court: Did you make any written reports to [417] your company, either before or after the signing of this statement?

The Witness: This is the only——

The Court: Concerning this incident?

(Testimony of Charles Herbert Caldwell.)

The Witness: This is the only statement I made to the Union Oil.

Q. (By Mr. Silvers): Just to make sure I have that clear, then, I understand you are saying this is the only statement that you have made to the Union Oil, but you did speak of drafts. Now, do I understand that someone else wrote down what you first said and then you corrected that, is that correct? A. Yes, that's right.

Q. Was the something that was written down by this other person, something written in long-hand or typed?

A. The original was in longhand and it was later typed and then I made corrections on the typewriting.

Q. From that corrected typewritten statement, this one which has been introduced in evidence was produced, is that your recollection?

A. Yes, sir.

Q. The Court has inquired about your knowledge of the capacity of this tank on the Santa Lucia, and if I have understood your testimony, you denied knowing what the capacity of the tank was, is that right? [418]

A. That is correct.

Q. Isn't it a fact, however, Mr. Caldwell, that regardless of whether the tank holds thirty, fifty, seventy-five or a hundred gallons you knew that when someone came and asked for gasoline as took place on this particular day that they were asking

(Testimony of Charles Herbert Caldwell.)

for gasoline enough to fill the capacity of the tank, isn't that correct?

A. No, that's not necessarily so.

Q. This was an auxiliary tank, wasn't it?

A. I don't know that it was.

Q. You knew that the main engines were powered by diesel?

A. You say an auxiliary tank; he said it was an auxiliary engine, not an auxiliary tank.

The Court: Tank of the auxiliary engine.

Q. (By Mr. Silvers): I am sorry. You knew that the tank that was being filled with gasoline was an auxiliary tank, didn't you?

A. That's what the man told me.

The Court: When did he tell you that?

The Witness: When I lowered the gas hose to him.

The Court: What did he say?

The Witness: I asked him if his main power was not diesel and he told me yes, but this was gasoline for his auxiliary tanks, auxiliary engine.

Q. (By Mr. Silvers): [419] Very well. Isn't it true that on September 23, 1955, you were asked this question and gave the following answer:

Mr. Nave: What page?

Mr. Silvers: Page 48, line 23.

"Question: Well, you knew on the basis——"

Mr. Nave: Pardon me, your Honor. That is a question, I believe, that has been asked by other counsel.



(Testimony of Charles Herbert Caldwell.)

The Court: I will permit it to be asked by this counsel.

Mr. Nave: I object to the duplicate cross-examination on the same subjects.

The Court: Your objection is overruled.

Q. (By Mr. Silvers): Didn't I ask you on that day the following question and didn't you give this answer:

"Question: Well, you knew on the basis of your past experience that the custom was to request gasoline for an auxiliary tank enough to fill the tank, isn't that correct?"

"Answer: Well, yes, he would request enough to fill his tank."

Didn't you give that answer to that question?

A. I did, and I also clarified it later.

The Court: How did you clarify it later?

Mr. Nave: I request counsel—— [420]

Mr. Silvers: Just a minute, Mr. Nave, the Court has asked a question.

The Court: How did you clarify it later, if you recall?

The Witness: If a man asked for gasoline enough to fill one tank he probably could have left another tank open. He didn't say to shut it off at thirty gallons, he thought he would take about that much, and if he was filling two tanks it could have gone over.

The Court: You were waiting word from him to shut it off?

(Testimony of Charles Herbert Caldwell.)

The Witness: He would have shut it off and told me he was full.

Q. (By Mr. Silvers): As a matter of fact, if the man had said he wanted 30 gallons, you would have shut it off at 30, wouldn't you?

A. If he said specifically he wanted 30 I would have shut it off.

Q. If he had said I want thirty gallons instead of saying I want about thirty gallons you would have shut it off?

A. If he had said shut me off at thirty I would have shut it off.

Q. Well, if he had simply stated I want thirty gallons of gasoline you would have shut him off, wouldn't you?      A. No. [421]

Q. Now, on the very next page of that same deposition weren't you asked this question—counsel, page 49, line 7 reading from the witness' answer to what is recorded as a question, but is not strictly speaking, that the question was recorded that I stated at that time was: "That is right, it varies for one thing according to the capacity of the tank."

And your answer following that statement was as follows, was it not, Mr. Caldwell?

"Whatever lines he may have left open as to filling other tanks if the man said he wanted exactly thirty I would have shut him off at thirty, but where he didn't I went about my business expecting him to shut his own tank off when he was full."

Didn't you give that answer at that time?

(Testimony of Charles Herbert Caldwell.)

A. I believe that is just what I restated.

Q. So because Frank Cardinale said, according to your testimony, that he wanted about thirty instead of saying he wanted thirty, you decided you would not have anything to do with shutting the gasoline off, is that correct?

Mr. Nave: I object to that as being argumentative, your Honor.

Mr. Silvers: Goes to the state of mind, your Honor.

The Court: Overruled. I don't think his state of [422] mind has much to do with this case, but I will permit the question.

Mr. Silvers: Would you read it back——

Q. Do you have the question in mind?

A. I do not.

Mr. Silvers: Would you read it, please?

(Record read by the Reporter.)

A. If he had said shut me off at thirty gallons I would have closed it off, otherwise he has control of his fueling.

Q. At any time, as I have understood you, all that you needed to shut off the flow was to turn a quarter turn of the valves beside the meter, is that right?      A. That's right.

Q. And you knew, didn't you, Mr. Caldwell, that it would take between five and ten minutes to provide about thirty gallons to this vessel on September 28, 1954?

A. No, sir, I did not. These were approximates.

Q. Maybe I misunderstand you, but I thought

(Testimony of Charles Herbert Caldwell.)

you said, Mr. Caldwell, a number of times that it would take about—between, rather, five to ten minutes to produce about thirty gallons of gas, the variation in time depending on the level of the gasoline in the storage tank on the dock. Did I misunderstand that testimony?

A. That is an approximation, yes. I said that earlier.

Q. And that was knowledge you had on September 28, 1954, [423] was it not? A. Yes.

Q. Yet this operation, according to your testimony, was permitted to continue from between fifteen to twenty minutes, isn't that right?

The Court: Your question is argumentative. How long did this continue from the time they put the nozzle into the outlet on the deck up to the time you heard him shut the flow off?

The Witness: Your Honor, I don't know. I think it was around fifteen or twenty minutes.

The Court: All right.

Q. (By Mr. Silvers): You heard the engines of the Santa Lucia being cut off before it came—withdraw that.

You knew that the engines of the Santa Lucia were not running or operating at the time it came alongside and tied up, isn't that correct?

Mr. Nave: I object to that, if the Court please. This witness would have no knowledge what went on inside the engine room.

The Court: You may ask him whether or not he noticed whether the engines were running.

(Testimony of Charles Herbert Caldwell.)

Mr. Silvers: He said so to his company on November 3. [424]

The Court: All right, don't argue with counsel, ask him direct.

Did the engines continue to run after she docked, or were the engines turned off?

The Witness: The engines were turned off as she tied up.

Q. (By Mr. Silvers): Now, in addition to not noticing any smells of cooking, you noticed no activity of any kind in the galley, isn't that correct, during this entire loading operation?

A. I don't even know where the galley was.

Q. Did you know on November 3, 1954, when you signed this statement?

A. I did not observe anything on the galley, or any cooking going on.

Q. Did you know where the galley was on November 3, 1954?      A. No, sir.

Q. I thought you said these were your words. I am calling your attention, Mr. Caldwell, to this particular sentence in the first paragraph—excuse me, the second paragraph of that statement.

“I observed no activity in the galley and I did not hear the radio running.”

Now, did you or didn't you say that?

A. I did. [425]

Q. Did you tell us you observed Frank Cardinale actually insert the nozzle of the gasoline hose into the fill pipe on the deck of the Santa Lucia?

A. Yes, sir.



(Testimony of Charles Herbert Caldwell.)

Q. Did you observe whether the nozzle or hose of the pipe—withdraw that.

Did you observe whether the nozzle filled the aperture of the fill pipe?

A. No, sir, I did not.

Q. You can't say whether it was loose or tight fitting, is that correct? A. No, sir, I couldn't.

Q. During the fifteen to twenty minutes you estimate this loading operation to have taken place, how much time in minutes, let us say, did you actually have Frank Cardinale under your observation?

A. That is very difficult to answer. I would say it would be a quarter of the time over all that he was tied up to the dock.

Q. Was the gas meter destroyed in the fire and explosion?

A. I don't know; I believe it was.

Q. To your knowledge was the gas hose completely destroyed?

A. I believe there was one picture we have of a piece of the hose hanging onto the dock, but can only identify the [426] coiled wire that was left of it.

Q. At no time during the loading operation did you observe anyone turning on any kind of machinery aboard the Santa Lucia, did you?

A. No, I didn't.

Q. Isn't it correct that part of your duties at the time you were talking about, when someone asks for approximately 30 gallons of gas to inform him

(Testimony of Charles Herbert Caldwell.)

when the approximately 30 gallons of gas had been delivered?

Mr. Nave: Object to that as having been asked and answered repeatedly.

The Court: Yes, objection sustained. You see, you're using a legal term when you use duty. I am to determine what his duties were in the light of the evidence and the facts as I ascertain them.

Mr. Silvers: I will rephrase that, your Honor, if I may.

Q. (By Mr. Silvers): Isn't it correct, Mr. Caldwell, that part of your duties as outlined for you by your employer, the Union Oil Company, at the time we are talking about, when someone asks for approximately 30 gallons of gasoline to inform them when the approximately 30 gallons of gasoline have been delivered? A. No; in that respect, no.

Mr. Silvers: Counsel, page 35, line 7. [427]

Q. (By Mr. Silvers): My question, Mr. Caldwell, I will ask you if I didn't ask at that time in September, the 23rd of 1955, if you did not give the following answer to that question. My question:

"Question: Isn't it correct——"

Mr. Nave: May it please your Honor, I want to make an objection to this specific question at this time; the question and answer have been heretofore asked this witness and it is repetitious.

The Court: Even so, this is cross-examination by another counsel. He has that right. Objection overruled.

Q. (By Mr. Silvers): My question:

(Testimony of Charles Herbert Caldwell.)

“Isn’t it correct that part of your duties at the time we are talking about where someone asked for approximately 30 gallons of gas to inform him when the approximately 30 gallons of gas had been delivered?”

Your answer:

“If he asks for it in that respect, yes, I would. In this case he didn’t.”

Didn’t you give that answer at that time?

A. That statement was made if the man asked to be informed——

Q. Just a minute, Mr. Caldwell, the only question—— [428]

The Court: Were you asked that——

Mr. Silvers: ——the only question is did you give that answer?

The Witness: I did, yes.

Q. (By Mr. Silvers): Did you or didn’t you?

A. I misunderstood it.

Mr. Silvers: I have no further questions, your Honor, at this time.

The Court: Any questions, counsel?

Mr. Vartan: I promise to be short.

The Court: Take as long as you want.

Mr. Vartan: You always say that, your Honor, you are very nice, but I know it is getting late.

Q. (By Mr. Vartan): One question, Mr. Caldwell.

(Testimony of Charles Herbert Caldwell.)

### Redirect Examination

By Mr. Vartan:

Q. You only had the man on the vessel, Frank Cardinale, within your view one-fourth of the time, is that true?

A. That is an approximation.

Q. All right. The rest of the time you did not have him in view, right?

A. That's right.

Q. So the rest of the time you don't know whether he was at the nozzle or not, isn't that true?

A. Sir, as far as I know he was at the nozzle all the time.

Q. Now, you say that this was a spring-loaded type nozzle which was used in this case. Now, assuming that it was this type (indicating) the flow starts by pulling your fingers, contracting your hands or fingers the way I have, is that true?

A. That is right.

Q. And when you let go it automatically stops?

A. Yes, sir.

Q. You testified before this was introduced in evidence when I asked some questions that this was the same type of nozzle that was used for the diesel deliveries, is that right?

A. It is similar.

Q. Is this the type of nozzle that a man would hold for the delivery on the boat, for the delivery of 3000 gallons of diesel oil and he would have to hold his hands that way for an hour or so?

(Testimony of Charles Herbert Caldwell.)

A. As I testified before, some of them put something under it to hold it open.

Q. Where did they put something, what do they put?  
A. In place of your fingers?

Q. What do they put?

A. Whatever the man chooses, it's his choice.

Q. What have you seen them put? [430]

A. A screwdriver.

Q. When they put the screwdriver under it what happens?  
A. It holds the nozzle open.

Q. And they can walk away, then, can't they?

A. They could.

Q. That was the practice that you had observed from previous fueling operations, isn't that right?

A. It isn't a good practice, but I have seen it done.

Q. You have seen it done. Now the screwdriver, I assume, the handle of the screwdriver is stuck right in here, is that right, right at the base of the pin that comes out?

A. No, sir, it is placed between the guard and the trigger.

Q. Show me where it is placed.

A. In this business here.

Q. Where?

A. This position where I have my fingers. (Indicating.)

Q. That is what I meant, right between the guard and the trigger. And when a screwdriver is placed there, or, as a matter of fact, a piece of wood can be placed there, too, couldn't it?



(Testimony of Charles Herbert Caldwell.)

A. Possible.

Q. And when that is done the man can walk away and leave the nozzle, can't he?

A. Yes, he could.

Q. The delivery of diesel, Mr. Caldwell, was that occasionally made to intake pipes which came up on the deck? [431]

A. I don't understand the question.

Q. Well, ordinarily when you delivered, sold diesel fuel to fishing vessels where was the intake pipe for the diesel fuel, same as the gasoline, similar?

A. Some vessels it was.

Q. In other words, it came up to the deck; in other words, the intake pipe came up flush with the deck?

A. Yes, that's correct, that is the standard.

Q. Some of the intake pipes for diesel fuel on some vessels were on the same side of the vessel as the gasoline intake pipe was on the Santa Lucia, isn't that true?

A. That's true.

Q. So you had seen men taking delivery of two to three thousand gallons of diesel fuel lock this nozzle in an open position and leave it there for an hour or so until they got their supply, isn't that true?

A. No, sir.

Q. You had never seen them do it?

A. For an hour, no.

Q. How long does it take, ordinarily, to deliver three thousand gallons of diesel fuel?

A. Excess of an hour.

Q. All right. A moment ago you said you had

(Testimony of Charles Herbert Caldwell.)

seen people put a screwdriver or wood or something else to keep it open and you said you had seen them do that. Now, I am asking you [432] had you seen them do that when they had the nozzle stuck into an intake on the deck of the vessel, fishing vessel?

A. Why, yes.

Q. You had seen them do that in the past before the day of this accident, isn't that right?

A. That's what I said.

Mr. Vartan: No further questions.

Mr. Nave: I have two questions, your Honor.

#### Recross-Examination

By Mr. Nave:

Q. Mr. Caldwell, were you at any time aboard the fishing boat Santa Lucia? A. No, sir.

Q. Did you ever make an inspection of the fishing boat Santa Lucia?

A. I have never been on the Santa Lucia.

Q. Did you observe or see Mr. Cardinale or anyone else aboard the fishing boat Santa Lucia insert any screwdriver, piece of wood or a wedge into the lever on the gasoline hose?

A. No, sir, I did not.

Mr. Nave: All right. That is all I have.

(Testimony of Charles Herbert Caldwell.)

Redirect Examination

By Mr. Vartan: [433]

Q. You don't want to leave the impression of your own knowledge you don't know that that was done after a minute and a half elapsed when you walked away when you weren't looking at this man, you don't know whether he did that or not, do you, of your own knowledge?

Mr. Nave: Object to that as being argumentative.

The Court: No, overruled. Did you see him do that? Let's put it——

The Witness: No, sir.

The Court: ——in a more direct way.

The Witness: No, sir, I did not.

The Court: Did you see this nozzle at any time jammed open in that fashion that you have described?

The Witness: No, sir.

The Court: At any time during this delivery of gasoline to the Santa Lucia?

The Witness: No, sir, I did not, and it was in my view any time I looked at the vessel.

Q. (By Mr. Vartan): It was in your view 25 per cent of the time, isn't that true, that is what you said? A. Yes, sir.

Q. And the other 75 per cent of the time it was not within your view; isn't that true?

A. That's an approximation. [434]

(Testimony of Charles Herbert Caldwell.)

Mr. Vartan: Very well. That is all.

The Court: All right, sir.

Mr. Silvers: If I may be permitted, your Honor, one question I forgot to ask concerning one of the photographs I introduced in evidence.

Recross-Examination

By Mr. Silvers:

Q. Mr. Caldwell, I am going to call your attention to two photographs, Respondent's Exhibits C and D in Evidence. The section of photograph C that I am referring to, that I am now pointing out to you, these pilings in this row, they represent the pilings alongside of which the Santa Lucia tied up, isn't that correct? A. That's true.

Q. This is the side of the oil dock, the gas sales dock that faced the Santa Lucia? A. Yes.

Q. This is the site where you were standing when you saw Frank Cardinale at the time, you have already indicated, right? A. Correct.

Q. Now, there is no fire damage on any of the pilings on the Santa Lucia side of the pilings, is there?

Mr. Nave: Your Honor, I object to that, asking this witness something that calls for a conclusion and requires [435] an interpretation of photographs.

The Court: He is asking him from his observation a physical condition which are patently before him. Objection overruled.

(Testimony of Charles Herbert Caldwell.)

The Witness: As you observed I agree that the fire damage is least next to the boat, but I am willing to offer an explanation of why——

The Court: No, we don't want an explanation.

Q. (By Mr. Silvers): I don't want it, I would like it as you saw——

The Court: Counsel, I can observe this photograph myself.

Mr. Silvers: All right.

The Court: What you may interrogate the witness on is concerning his personal observations of this dock after the fire.

Q. (By Mr. Silvers): At any time after the fire, Mr. Caldwell, did you see any fire damage on the face of the pilings that faced toward the Santa Lucia? A. Why, yes, I did.

Q. On what portion of the pilings?

A. On both the inside and the outside in some locations.

Q. I am not talking about the inside of the pilings, I am talking about the outside, the outside face of the pilings that [436] was nearest to the Santa Lucia. Do you understand my reference, first of all?

A. As to what part of the dock are you talking about?

Q. I am talking about the part of the dock alongside which the Santa Lucia tied up. Do you have that in mind?

A. That's a very general question.



(Testimony of Charles Herbert Caldwell.)

Q. Well, isn't it the part that is shown on these photographs, Mr. Caldwell?

A. Well, on your photographs that is what it appears.

Q. I didn't take these.

The Court: That would be the east side of this dock?

The Witness: Yes, sir. The bow of the Santa Lucia was most heavily damaged and that's where most of the damage was, and this is a different part of the dock.

The Court: Any other questions?

Mr. Silvers: No, your Honor.

The Court: Thank you very much.

Mr. Nave: Your Honor, please, I have one question on this photograph mentioned here.

#### Recross-Examination

By Mr. Nave:

Q. Mr. Caldwell, I call your attention to Respondent's Exhibit B, a photograph, and you mentioned in your testimony [437] in response to, I believe, a question of Mr. Silvers, that part of the wire or bonding wire of the gasoline hose was in the picture. I will ask you to examine this photograph and tell me if you can see in that photograph the bonding wire or part of the hose that you have mentioned?

I call your attention to an X that had been marked on this Exhibit previously and ask you if that is what you are talking about?

(Testimony of Charles Herbert Caldwell.)

A. Yes, sir, that is it.

Q. That is the piece of the bonding wire out of the hose that was used in the filling operation?

A. Yes, sir, this is the same wire.

Mr. Nave: For the record that is an X that appears on the photograph to the right of the second piling from the right. Thank you, I have no further questions.

### Redirect Examination

By Mr. Vartan:

Q. Did you have a grounding cable present on that gas dock?      A. Is that a question?

Q. Yes.

A. The grounding cable was the wire with the hose.

Q. I asked you whether you had a grounding cable?

The Court: Separate from the hose?

Mr. Vartan: Separate from the hose? [438]

A. No.

Q. (By Mr. Vartan): Did you use a grounding cable on the Lompoc that day?

A. Yes, sir.

Q. Was the hose on the Lompoc different from the hose here?

A. It is all of a similar nature.

Q. It also has the wire, doesn't it?

A. Yes, sir.

Q. The Lompoc has hose just like the hose that was used to fill the Santa Lucia. In other words, it

(Testimony of Charles Herbert Caldwell.)

has the wire entwined that counsel just pointed out in the picture, but on the Lompoc—you helped work the Lompoc that day, didn't you?

Mr. Nave: If the Court please, I object to the interrogation concerning the Lompoc, not being immaterial here.

The Court: Objection overruled.

Q. (By Mr. Vartan): You worked on the loading or filling of the Lompoc, didn't you?

A. Some.

Q. You know that a grounding cable was used in that case, don't you? A. Yes, sir.

Q. And none was used for the Santa Lucia, was there? A. No, sir.

The Court: What type of hull is the [439] Lompoc?

The Witness: That is a steel hull.

The Court: Any further questions, counsel?

Mr. Vartan: No, your Honor.

Mr. Nave: Your Honor, may I ask——

The Court: Now, gentlemen, if there is going to be much more here with this witness we better have the witness come back tomorrow. We can stay here as long as you want, but I would like to know. Should I direct this witness to come back tomorrow morning or do you want to complete the examination today?

Go ahead, ask your question.

(Testimony of Charles Herbert Caldwell.)

Recross-Examination

By Mr. Nave:

Q. Mr. Caldwell, in the filling of this type of gasoline on a wooden hull is it necessary and customary to use grounding cable? A. No, it isn't.

Q. Did you have any instructions to use a grounding cable when you're filling a wood hull fishing boat of this type?

A. The only thing to bond to would be the fill opening of the gas tank and that is bonded through the hose.

Mr. Nave: Thank you.

Q. (By Mr. Vartan): Is that bonded through the hose when the nozzle is [440] taken away from the hole and laid on the open deck?

A. No, sir, it isn't.

Q. So when the nozzle is raised from the fill pipe there is no bonding cable in effect, isn't that right?

A. The bond would be disconnected.

Mr. Vartan: Yes. That is all.

The Court: Thank you, gentlemen. Come in for a few minutes and I will be glad to see you in chambers.

(Whereupon the Court adjourned until 10:00 o'clock a.m. of Friday, September 6, 1957.) [441]

September 6, 1957—10:00 A.M.

The Clerk: Cardinale and others versus Union Oil Company and others, further trial.

Mr. Vartan: Ready, your Honor.

Mr. Nave: Ready.

Mr. Silvers: Ready.

Mr. Vartan: Call Doctor Mason to the stand.

DAVID M. MASON

a witness called by the Libelants, having been first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

The Clerk: Please state your name to the Court.

The Witness: David M. Mason.

Direct Examination

By Mr. Vartan:

Q. What is your business or occupation, please?

A. I am a professor of chemical engineering at Stanford University.

Q. I didn't get that, please.

A. Professor of chemical engineering at Stanford University.

Q. What is your position in the chemical engineering [442] department at Stanford?

A. I am the head of the division of chemical engineering.

Q. You are the head of it?           A. Yes.

Q. Where did you receive your college training?

A. I received my Bachelor's, Master's and Doc-



(Testimony of David M. Mason.)

tor's degree at the California Institute of Technology.

Q. Were those degrees in the field of chemical engineering?

A. They were in the field of chemical engineering, yes.

Q. Doctor, are you a member of any chemical societies, please?

A. I am a member of the American Institute of Chemical Engineers.

Q. Does the subject of the formation and combustion of gasoline vapors fall within the fields of your study?

A. Yes, they do, both my research studies and also my teaching.

Q. That also includes the character, natures and propensity of gasoline vapors?

A. That is correct.

Q. Have you engaged in any research in the field of the gasoline or similar vapors?

A. Yes, I worked for the jet propulsion laboratories for six years at which time I worked with hydrocarbon combustion.

Q. Where was that, please? [443]

A. This is located at Pasadena; it's a part of the California Institute of Technology.

Q. In that research did you personally conduct experiments in that field? A. Yes, I did.

Q. Besides being the head of the chemical engineering department at Stanford do you actively engage in teaching? A. I do, yes.

(Testimony of David M. Mason.)

Q. Will you tell his Honor what subjects you teach?

A. Well, over the past few years I have taught a course in industrial chemistry, a course in chemical engineering kinetics, a course in combustion, and a course known as unit operation, and chemical engineering.

Q. Now, Doctor, these questions are probably very elemental and his Honor probably has judicial notice of many of them, but preliminarily gasoline is——

Before I ask you that, when we use the term “gasoline” in these questions, throughout the questions, we mean 7600 Union Oil commercial gasoline. Now, are you familiar with that? A. Yes.

Mr. Nave: It is 76.

The Court: I think the witness said 7600. It is regular gasoline, regular gasoline as distinguished from the [444] so-called special Ethyl.

Mr. Vartan: Yes.

Q. (By Mr. Vartan): Now, gasoline normally is in liquid form, is that right?

A. That is correct, yes.

Q. And gasoline in liquid form is combustible?

A. In a liquid form it is not combustible, no. Gasoline itself is just a fuel, and until mixed with some oxidizer, such as air, which requires vaporization, it is not combustible.

Q. Is gasoline volatile by nature?

A. Quite volatile, yes. This is one of the characteristics of gasoline as a fuel. It is quite volatile.

(Testimony of David M. Mason.)

Q. Will you tell us the process of the volatility of gasoline, what happens when it goes through the process of volatility?

A. Well, the process of evaporation is what occurs and liquid gasoline, having a very high vapor pressure, has a tendency to form a large amount of vapor in a short period of time.

Just as a point of reference, gasoline is roughly about fifteen times as volatile as water, and I think this volatility is very well demonstrated when one sees spillage of gasoline on paving, it immediately tends to disappear or vaporize.

Q. Now, when gasoline vapors are formed as a result of [445] the process you just described will you tell us what their relative weight is to air?

A. Gasoline vapors are quite heavy relative to air. They have a density of about three to four times that of air. Accordingly, they tend to stay at a low level and they don't have a great tendency to rise.

Q. If gasoline vapors are formed, putting it in layman's language, am I correct in saying they are four times as heavy as air?

A. That is correct, yes.

Q. Also in layman's language am I correct in saying, Doctor, that when gasoline vapors are formed they tend to seek lower levels?

A. That is correct.

The Court: In a normal atmosphere?

The Witness: In air, yes, that is correct.

(Testimony of David M. Mason.)

Q. (By Mr. Vartan): Now, gasoline vapors, it goes without saying, are combustible?

A. That is definitely, yes.

Q. And is there a range of—I don't know if I am putting this right—is there a mixture or a range of mixtures of combustion?

A. Well, in order for gasoline vapor to propagate, or the combustion process, there must be a certain amount of air [446] present, and it turns out with this particular system gasoline takes from about 1.3 to about 6 volume per cent of the gasoline vapor admixed with air to form a combustible mixture.

Putting it a little differently, it takes, oh, about 98.7 to 94. per cent of air admixed with the gasoline vapors to form a combustible mixture.

In other words, for gasoline vapor to burn there must be a great excess of air present, and this, of course, makes gasoline vapors quite useful as fuel. Secondarily, it makes it quite explosive.

The Court: Can you have combustion without oxygen?

The Witness: Truly speaking, you can, yes.

The Court: Practically speaking, gasoline vapors?

The Witness: No, gasoline vapors you cannot.

The Court: Go ahead.

Q. (By Mr. Vartan): Can gasoline vapors, within the combustion ranges or range that you just mentioned be formed in the open?

A. Yes, they certainly can.

(Testimony of David M. Mason.)

Q. Are gasoline vapors more readily formed in the open than they are in a confined space?

A. Yes, they are.

The Court: Are they more quickly dissipated in the open?

The Witness: Yes, that would follow. In [447] other words, the fact that you have an open container allows the gasoline liquid to vaporize more rapidly, it doesn't build up a barrier as it does in a closed container. There is a continuous process of vaporization in an open container, while naturally in a closed vessel the vapor will build up and then stop.

Q. (By Mr. Vartan): Yes. Now, to illustrate only the actual process of the formation of gasoline vapors, will you take this hypothetical situation, and it's rather crude, but I just want to illustrate the process.

Assume that you have a can of gasoline, say six feet in diameter, a round can and you have a quarter of an inch or  $3/16$ ths of an inch or a  $1/16$ th of an inch of gasoline in that can and it is out in the open. Now, from that point will you tell the court what takes place as the vapors are formed?

A. Of course, you have this process that I mentioned earlier, the vaporization occurring, and, depending on the thickness, say a  $1/16$ th inch thickness of liquid might completely disappear in a matter of three to five minutes.

The Court: Wouldn't the rate of disappearance



(Testimony of David M. Mason.)

depend on large measure upon the heat to which it was subjected?

The Witness: Yes, this would be at normal atmospheric conditions.

The Court: What do you mean by a normal atmospheric [448] condition, what would you take to be a normal atmospheric condition?

The Witness: I would say——

The Court: With reference to temperature.

The Witness: I would say 70 to 100 degrees fahrenheit. At 100 degrees fahrenheit the process would be much more rapid. At a normal temperature of 70 I would say about 3 to 5 minutes might be expected.

Q. (By Mr. Vartan): Having in mind what has been described as a balmy day in San Luis Obispo——

The Court: I don't know that any such standard can apply. But it seems to me this testimony, while I have great respect for this witness' training and education and ability and competency, it seems to me that as a matter of common sense there are so many variants present that I don't see how the professor's testimony is going to be of very great help to me.

Mr. Vartan: Yes, your Honor, as I have prefaced the question——

The Court: If he had been there at the time of the explosion I might take his expert opinion as to what caused the accident.

(Testimony of David M. Mason.)

Mr. Vartan: No, I am not assuming the burden, your Honor, on behalf of these seamen——

The Court: All right, go ahead, but I simply want [449] to indicate to you my thought.

Mr. Vartan: I know, but I merely state my position for the record, we have certain testimony——

The Court: You go right ahead, counsel, don't make any apologies.

Mr. Vartan: All right.

Q. (By Mr. Vartan): Now, having in mind the hypothetical situation, you stated that there would be a process of formation of gas vapors. Now, to what height, having in mind the absence of air or breeze or wind, to what height would those gas vapors rise above that can of gasoline?

A. Well, of course there is this general inclination of gas vapors being heavier than air to cling to the ground. Once again, the actual climatic conditions would have to be known here, but I would say just in general there would be a tendency for the vapors not to rise to too great a height.

Q. All right. And then after formation and rising to, you said, to not too great a height, what would the direction of the vapors be?

A. There is a tendency for them to diffuse laterally, that is, to creep along the surface and continual eddying and mixing of the gas laterally as well as mixing in a vertical direction.

Q. Now, will you explain the time element in-

(Testimony of David M. Mason.)

volved in the [450] formation of gas vapors in the hypothetical situation?

A. Well, as I said, once again I think it would be a rough approximation to say that in about a 16th inch thick layer of liquid gasoline would take in the order of three to five minutes to vaporize at, say, about 70 degrees fahrenheit, in the absence of any strong gust of wind, just a normal free evaporation.

The Court: Under ideal laboratory conditions.

The Witness: Yes, correct, without any—this would be increased, the time would be lessened if one had some forced conditions, breezes, blowing.

Q. (By Mr. Vartan): Now, assume you placed the same can of gasoline in the engine room of a vessel which, I think, has been estimated to have a 120 square feet of free space, would the time element of the evaporation of that gasoline be the same or any different?

A. May I ask, you are mentioning the free space, what is that figure?

Q. 1200 square feet.

A. 1200 cubic feet?

Q. I mean cubic feet.

A. Actually, to get an idea of how much explosive vapor can be formed from gasoline the rule of thumb is that each gallon of gasoline can form, when admixed with the appropriate mixture of air, can form ten thousand gallons of combustible mixture. So that in this particular space you are mentioning, [451] 1200 cubic feet, about a half a gallon

(Testimony of David M. Mason.)

of gasoline mixed with the appropriate amount of air could fill the space with combustible mixture.

Q. And with the same time elements involved in the confined area that I mentioned?

A. Now, are we assuming again we have a free evaporation from the liquid?

Q. Yes.

A. Yes. This would be, perhaps——

The Court: I am going to give very, very little weight to this testimony. The professor never saw the ship, he doesn't know the conditions that are there. It is common sense and common knowledge that gasoline vaporizes, and it is common knowledge, and I will take judicial notice of it, if not, I will take it from the professor's testimony, that gasoline vapors are combustible and that if confined in an area and if ignited it will give out an explosion similar to what you have in an automobile engine.

Mr. Vartan: Yes.

The Court: That's common knowledge.

Mr. Vartan: Yes.

The Court: I think we can almost——

Mr. Vartan: I think I mentioned that.

The Court: I think we almost can take judicial notice of those facts of everyday life. [452]

Mr. Vartan: All right. I was apologetic——

The Court: Don't be apologetic.

Mr. Vartan: I know this is elementary, but we didn't know whether we should bring it in for the record.

(Testimony of David M. Mason.)

The Court: You go ahead and you try your case the way you see it.

Mr. Vartan: This is a circumstantial case, you see.

Q. (By Mr. Vartan): Now, Doctor, can you please state the characteristics of a combustion of gas vapors in the open, what takes place?

A. Of course, to initiate the combustion process there has to be a source of ignition, and in a gasoline-air mixture normally any ignition source which attains a value of 500 degrees fahrenheit or higher will cause combustion to ensue.

Now, this source could be in the form of a spark, hot body of any type, just as long as the local temperature is raised to the 500 degree fahrenheit level.

Q. What takes place when the ignition of these gas vapors takes place, what occurs?

A. Propagating from the source of ignition then we have a flash fire, in common parlance, but it is actually a combustion process which, in the gas phase, travels at a very high rate of speed, roughly about twenty feet per second in the normal air-gasoline mixture, and this spreads throughout the whole combustible gas-air mixture. [453]

Q. In other words, we are talking about the combustion of gas vapors in the open?

A. Correct.

Q. By the way, is there a color to a flash fire of combustible gas vapors out in the open, is there a color that can be seen?

A. Yes. We might go back a bit and point out



(Testimony of David M. Mason.)

that combustion truly is the rapid chemical oxidation accompanied by a large quantity of thermal energy or heat, and also accompanied by light due to the thermal energy.

Now, one would see in a gasoline-air combustion process a colored flame, and, depending on the temperature, the flame could be either real white, which would represent a high temperature, or a dull red which would represent a lower temperature. Specifically, the high temperature of about 1800 degrees centigrade would cause a white flash or a flame. A temperature of a lower order of around a thousand degrees centigrade would cause a red flame. And you would have something in between this spectrum, depending on the temperature.

Q. Now, the flash that takes place is the actual rapid burning of the gas vapors, is that right?

A. That is correct.

Q. And the flash that takes place takes place right at the point where the oxidation or burning, rapid burning of the vapors take place, isn't that true? [454]

A. Yes. In other words, the light that one sees from a flame is the end result of the combustion process, the evolution of heat.

Q. Now, what are the characteristics of a combustion of gas vapors, Doctor, which takes place in a confined area? We can just as well assume an engine room of a vessel of 1200 cubic feet.

A. Well, when this particular combustion process is confined the energy developed, which re-

(Testimony of David M. Mason.)

sults in raising the temperature you just mentioned, also, if confined, will result in a rising of the pressure, and if completely confined and the vessel is not strong enough to withhold it, the pressure developed will cause destruction of some type.

Actually, to give a figure in a laboratory test with gasoline-air in an appropriate combustible mixture range, one develops anywhere from fifty to one hundred pounds pressure per square inch in the vessel.

Q. Now, going back to the combustion of gasoline vapors in the open you mentioned that there would be a resultant flash or light. Is there also a sound which results from such a combustion in the open?

A. Well, in a combustion process in the open very often it will be accompanied by a rushing sound, such as a sudden gust of wind. If confined, one is likely, due to the pressure that builds up, there is suddenly a release of this pressure [455] and one develops what is known as a shock wave and we get a concussion or report and it sounds like an explosion.

Q. The flash resulting from a combustion of gas vapors in the open, is there also a disturbance of atmospheric pressure where an object can be knocked down or turned around?

A. Oh, yes, certainly there is a pressure wave form as energy and if it strikes an object a force is imposed on the object.

(Testimony of David M. Mason.)

Mr. Vartan: Now, I am almost afraid to ask this, some of these questions, they are so elementary, your Honor, but——

The Court: Don't hesitate at all to ask any question you think you should now.

Mr. Vartan: All right.

The Court: Don't give any apologies, you have a duty to perform.

Q. (By Mr. Vartan): Doctor, it's true, is it not, that when a combustion of gasoline vapors takes place in the open you said there is a flash. Now, it's true that there is heat generated?

A. Yes.

Q. Is that a very sudden generation of heat?

A. Yes, I think as I mentioned a minute ago the combustion process itself will spread through a gas at quite a high velocity, and it is fair to say combustion is this maximum [456] pressure I mentioned a moment ago of about 50 to 100 pounds per square inch and is developed in the order of two one hundredths of a second in a laboratory test.

Q. Now, in that two hundredths of a second of high heat can a flash burn to the hands of a person within the flash area result?

A. Oh, yes, the fact that one has temperature as high as 1800 degrees centigrade could certainly result in burning of any type of tissue.

Q. Doctor, will you please assume that during the fueling of a vessel with gasoline and after ten to twenty minutes of fueling process there are two

(Testimony of David M. Mason.)

noises or booms heard and a flash takes place out in the open followed by an explosion from the bowels of the vessel, now, first what significance does the flash preceding the explosion in the bowels of a vessel have to you?

Mr. Nave: Pardon me. I object to that as assuming a hypothetical state of facts.

The Court: Well, we will take the answer, but I again state I am not going to pay a bit of attention to it. I will allow the answer on the record. I don't give it any weight at all. The doctor may testify as to chemical properties of gasoline and he may testify as to the action of the gasoline under different circumstances and I will be a most interested hearer. However, he never saw this ship; you have no evidence [457] of the atmospheric conditions, you have no evidence of the temperature, you have no evidence as to a number of variables which would alter the weight to be given to his testimony.

Mr. Vartan: Well your Honor, if I may be heard——

The Court: If there was a breeze blowing on this dock, Professor, I guess you could not get any vapors to collect on it, could you?

The Witness: Yes, right locally near the vessel it turns out that——

The Court: I say on the dock.

The Witness: Yes. Just a moment, please. The vapors cling over the deck, they will be at rest, the



(Testimony of David M. Mason.)

gas will be at rest right next to the body, so you could have local——

The Court: It would depend on the direction from which the wind was blowing, wouldn't it, Doctor?

The Witness: Yes, certainly would. But I say right close to the deck you still have a portion of the gasoline, but eventually——

Mr. Vartan: I wish your Honor would listen——

The Court: I am going to listen to him as I am required to do in fairness, but the weight to be given an expert's testimony rests entirely with the trier of the fact, and I simply indicate to you my evaluation of this testimony with respect to this particular case.

You go ahead, though, you make your [458] record counsel. Somebody else might give greater weight than I.

Mr. Vartan: Well, the position placed——

The Court: The position is you make your record, counsel. You ask your questions, you protect your clients' interest.

Mr. Vartan: Well, it takes the wind out of my sales when your Honor says it is useless.

The Court: I simply tell you that as a trier of the facts. Of course, it might be proper if I sat here like a bump on a log and kept my mouth shut.

Mr. Vartan: No, no, your Honor.

The Court: I am not built that way and I don't believe that's part of a judicial process.

Mr. Vartan: If I may be heard very shortly.



(Testimony of David M. Mason.)

The Court: You go ahead now, and make no apologies, again I tell you, make no apologies for propounding any question you feel is a proper question and is necessary for the protection of your clients' interest.

Mr. Vartan: You see, we have certain evidence given by the witnesses, for example, of the flash and explosion and this man, being an expert, we want him to explain the phenomena, the scientific explanation.

The Court: Go right ahead.

I don't think the Professor answered the last question. [459]

Mr. Vartan: I forgot what it was.

The Court: If it was a good question you would remember it.

Mr. Vartan: Not after this discussion, your Honor.

The Court: Do you remember the question that was asked?

The Witness: The question was in regard to the possibility out in the open with a breeze, the combustion process occurring.

Q. (By Mr. Vartan): Yes, let's go into that. What effect does a wind described from as practically no wind up to 3 to 5 miles an hour over the open area of the dock have upon the formation of gas vapors; first, as to the formation?

Mr. Nave: I object to that, if the Court please——

The Court: Overruled.

(Testimony of David M. Mason.)

Mr. Nave: For the record I want to make an objection; assuming something not in evidence.

The Court: That's right, I understand. We have no evidence as to the wind force here at any time.

Mr. Vartan: Yes, your Honor, one of the witnesses, Mr. Garrett Ray, testified it was a balmy day, there was a very small amount of wind, and one of the other witnesses testified something about three to five miles an hour wind upon cross-examination by Mr. Nave. [460]

The Court: All right.

The Witness: I would say—incidentally, this would be a relatively low wind velocity and it would definitely be feasible to have gasoline vapors accumulate in an area with this type of wind. Naturally, some of the vapors will be swept away; at the same time the sweeping action hastens the volatilization, so it is fair to say particularly right close to some solid body that the velocity would approach zero. This is a known fact, and therefore vapors would be in quite a high level of concentration at this point.

Q. (By Mr. Vartan): All right. Now, what significance would the two noises having been heard at the time of the flash followed by the explosion, what significance would that have?

A. Well, I think it would be fair to say if one saw a flash and could localize it this would indicate to him, perhaps, the source of the ignition mixture. If this were followed by an explosion it would indicate that the propagation, which I mentioned was

(Testimony of David M. Mason.)

at a fairly high rate, went from the source of ignition to some other location where perhaps the combustible mixture was confined leading to what we know as destructive combustion or explosion.

Q. And that would result in two noises?

A. Yes.

Mr. Vartan: You may cross-examine. [461]

The Court: Mr. Whelan, did you prepare the decrees on the other five cases?

Mr. Whelan: We will have them by Monday; I have had no time.

The Court: All right.

Mr. Nave: We have no questions.

The Court: Do you have any questions, counsel?

Mr. Silvers: Yes, sir.

The Court: All right.

Mr. Silvers: I would like to offer in evidence, your Honor, another photograph of the Santa Lucia, may it please the Court.

The Clerk: Respondent's Exhibit L introduced and filed into evidence—Cardinale's Exhibit.

(Whereupon, the foregoing photograph was introduced and marked as Respondent's Exhibit L (Cardinale) in Evidence.)

(Testimony of David M. Mason.)

Cross-Examination

By Mr. Silvers:

Q. Doctor Mason, I am going to refer to a certain boat called the Santa Lucia, which was blown up, the case we are involved with, by a Union Oil gas dock. The picture of the Santa Lucia that I am showing you now, that I am going to show you now, and the picture of the oil dock as shown in Respondent's [462] Exhibit I, I am also showing you. The dimensions of the boat were about 72 or three feet long with a beam of about 21 feet, and the character of its superstructure, the openings, portholes and so on, I think, is revealed by the photograph you have looked at.

Will you keep those points in mind, please, when I direct your attention to the boat in the area of the dock.

Mr. Silvers: Your Honor, I would like to offer in evidence at this time a sketch drawn by the marine surveyor, Captain Hansen, which all parties have seen, showing diagrammatically the location of the engine in the engine room, the exhaust leading from the engine to the outer air and the vent in the forward part of the ship.

The Court: Any objection to that?

Mr. Vartan: No, your Honor.

Mr. Nave: I have no objection if it is for the limited purpose only of showing the space inside the hull of the ship.

The Court: All I want to know is there an ob-

(Testimony of David M. Mason.)

jection to receiving this in evidence as being an accurate picturization or a diagram of the portion of the ship it purports to portray?

Mr. Nave: I object to it, your Honor.

The Court: Objection sustained.

Mr. Silvers: I am not offering it for the purpose of—— [463]

The Court: I am not going to take these Exhibits with a lot of limitations on them. Either you consent to that and admit it or you don't.

Mr. Silvers: I would like to offer it for illustrative purposes only.

The Court: Illustrative of what? He says it is not illustrative of the engine room. If he concedes that it is I will take it in evidence.

Mr. Silvers: Well, I hadn't quite finished. Illustrative of the site of the main engine of the forward vent leading——

The Court: I will not take it in evidence unless consent is given that it may be received for that purpose.

Mr. Nave: I object to its introduction: Captain Hansen will have to identify it and testify as to how he arrived at the computations.

Mr. Vartan: Let the record show that Captain Hansen——

The Court: The record will show nothing, there is nothing before me now.

Mr. Vartan: All right.

The Court: Won't have the record show something until you bring in a witness. Go ahead. [464]



(Testimony of David M. Mason.)

Q. (By Mr. Silvers): Doctor, from your knowledge of the characteristics of gas vapor is it probable that gas vapors formed on the dock that I have shown you a picture of, assuming the vessel I have shown you a picture of was tied up alongside that dock, would find their way in seeking lower levels into the portholes and other open spaces of the vessel as you see it in the photograph?

Mr. Nave: If the Court please, I object to that as calling for a conclusion, not based on facts in this case. Furthermore, it would not be proper cross-examination of this man who was introduced as an expert by the Libelants.

The Court: If the professor can answer this question he is more than a professor, he is a magician. However, the objection is overruled. Let him answer it.

The Witness: I think one has to set some conditions on the picture. This wind velocity again enters the scene. May I also ask on the dock are there——

The Court: You may not ask—on that question can you give him an opinion on that question?

The Witness: Not without hypothesizing.

The Court: All right.

Q. (By Mr. Silvers): Well, assume further that the wind conditions, having been described by an eye witness as being from zero to 3 to 5 miles an hour, assumes a warm, balmy day so that someone fishing [465] in a skivvy shirt 50 feet way, assume that the dock you are looking at is approximately 15

(Testimony of David M. Mason.)

to 20 feet above the water level and the main deck of the vessel you see there is approximately 12 feet below the level of the dock; assume an installation on the dock that includes in part a gas tank with ordinary commercial automobile gasoline on it, and then I would like to ask you whether vapors, gasoline vapors formed from liquid gasoline of that type would, because of their physical characteristics, tend to seek lower levels below the level of the dock, and assuming the boat in the position I have described, leave and enter, rather, enter the boat through openings, such as portholes, doorways and ventilators as shown on the photograph.

Mr. Nave: I object to that, if the Court please, assuming a state of facts, not in evidence.

The Court: Objection overruled. We will let the witness answer, if he can.

The Witness: There is this natural inclination for gasoline vapors to seek their own level, four times as heavy as air, so they naturally tend to go downward. Now if there were, let's say, cracks of some type in a dock area then the tendency would be even enhanced for them to spill underneath the pier itself. As I said earlier there definitely would be a zero velocity of wind vapor right at the surface of the dock itself irrespective of the wind velocity up further, so there [466] would be a tendency for these vapors to seek a lower level. Some of them would spill over the edge of the pier and if there were cracks in the pier there would be a tendency for them to spill through that.

(Testimony of David M. Mason.)

Q. (By Mr. Silvers): And would a flash described by an eyewitness as an orange-white flash approximately fifteen feet in height rising about ten feet above the level of the dock that you have before you and extending out from the dock in the direction of the boat tied alongside some five feet and extending below the level of the dock approximately five feet, would such a white flash first indicate an ignition of gasoline vapor in the area where it is seen? A. It would, yes.

Mr. Nave: Pardon me. I object to that, if the Court please, again assuming something not in evidence, calls for a conclusion of this witness.

Mr. Silvers: Well, this has been testified to by the witness Garrett Ray.

Mr. Nave: Furthermore, not proper cross-examination. This man is now being used as a witness by Mr. Silvers as a professional expert and it isn't cross-examination. I want that objection on the record.

The Court: The objections are duly noted upon the record, but it is my ruling the objection is overruled. [467]

Q. (By Mr. Silvers): If you have the question in mind, Doctor, would you answer it? Or would you like to have it repeated?

A. I think you better repeat it.

The Reporter: There was an answer: "It would, yes."

Mr. Silvers: I am sorry.

(Testimony of David M. Mason.)

Q. (By Mr. Silvers): And would that flash, which I think you told us is actually a very fast fire, is that correct? A. Yes, correct.

Q. Communicate over a gas-air vapor trail to the ship, assuming that there was a gas-vapor trail leading from the dock to the ship alongside as I have previously described?

Mr. Nave: May I make the same objection and on the same grounds as previously phrased?

The Court: Objection overruled.

The Witness: Wherever there is a combustible mixture of gasoline and air and in a continuous path, all it takes is a source of ignition in one location to cause this explosion to travel throughout the whole body of the combustible mixture.

Q. (By Mr. Silvers): And during the time that the explosion is not confined, during the time it is moving, in my example, from the dock to the vessel, it is observed as a flash, is that right?

A. Yes. [468 ]

Q. When that fire or explosion enters a confined area, such as the engine room of a vessel we are referring to, what we commonly talk of as an explosion then takes place because of the confinement, is that correct?

Mr. Nave: May I note an objection on the same grounds?

The Court: I really don't know what his question means. If he does, he may answer, and your objection is overruled.

The Witness: Once again, if one assumes there is a combustible mixture in this confined space you



(Testimony of David M. Mason.)

are mentioning and there was this ignition source starting the combustion trail up on some other area, then it's true this will go into the confined space, combustion will ensue there and result in a high pressure and resulting in damage.

Q. (By Mr. Silvers): Doctor, in the after portion of the deckhouse (on the photograph I have shown you) is located what witnesses have described as the galley of this boat—I am pointing to the general area—there is a stove in that galley. I will ask you to assume that, and I will ask you further to assume that there is a small pilot light in the stove; I will ask you to assume that—withdraw that last phrase. Could that pilot light in the stove in the area that I have described for you ignite a combustible vapor-air mixture in the galley and [469] in the immediate stove area causing an explosion without destroying or severely injuring the stove?

Mr. Nave: I object to that question, if the Court pleases. There is no foundation laid for a question of that type in this case.

Mr. Silvers: Your Honor, here is a man who is an expert on gas.

The Court: We will let him ask it. Overruled.

The Witness: I think what is fair to say again if there is a combustible mixture of air and gasoline in the galley there is an avenue of—there is an ignition source, which I have pointed out, and if there is a flame which would have come oh, five hundred degrees fahrenheit temperature, there would be an ignition source and combustion is very likely to



(Testimony of David M. Mason.)

occur if these combustible mixtures come to the ignition source.

Now, the extent of damage, of course, is going to depend on the quantity of these gaseous materials in the galley, and one could go between two extremes. One could either get a small, maybe a small wisp of gas, there would be just a flash, in which case one would not see damage. On the other hand, if the whole galley was filled with a combustible mixture then one could get serious damage in the galley.

But the answer to the possible combustion, if these gases do, in the proper mixture, get near the flame, they are [470] going to ignite. The extent of damage depends on the amount of vapors present.

Q. (By Mr. Silvers): Well, if there were explosions within the space of that time, a second or two, sufficient to break apart a ship, the one you are looking at, so that the midship section is completely broken or broken to the extent it immediately sinks, if an ignition source sufficient to produce that kind of result were in the galley stove or immediately around it, would the galley stove immediately after that kind of explosion be intact?

A. In my opinion the galley would not be intact, no.

Q. Including the stove?

The Court: You see, counsel, the professor will tell you he has never seen the stove, he knows nothing about the specifications of the stove, and if he were to tell you that the stove would or would not

(Testimony of David M. Mason.)

be intact he has a wonderful imagination and he is not basing it upon scientific knowledge.

Don't you agree with that, Professor?

The Witness: That is true, yes.

The Court: You know so little about these conditions, that really all you can tell us about are the general properties of gasoline under certain conditions; isn't that a fact?

The Witness: Yes, and hypothesizing certain situations with the same gasoline vapor and air mixtures. [471]

Q. (By Mr. Silvers): Doctor, in all your training and experience you have become familiar with the explosive characteristics of gasoline, haven't you?      A. Correct.

Q. And you have observed on many occasions the resulting explosive characteristics of gasoline on material objects, have you not?      A. Yes.

Q. Then you can tell us, can't you, on the basis of your training and experience what is going to happen to a galley stove that would fit within the confines of the galley that is in the photograph I have shown you, which has been described by a witness as being perhaps five or six feet in length and maybe a couple of feet wide on the top surface. You can do that, can't you?

A. I think of two possibilities. I would say a cast iron, old type of stove, might withstand this combustion process and not show material damage. A light sheet steel type of stove might be caved in.

(Testimony of David M. Mason.)

There would be a range of damage unless one would see the stove.

Q. Is it your expert opinion that an explosion serious enough to break apart this vessel that you are looking at would not damage a cast iron stove if the ignition took place at the stove? [472]

A. Possibly, yes.

Q. But it's not very probable, is it, sir? Isn't it more probable the stove would be completely destroyed?

Mr. Nave: I am going to object, if the Court please——

The Court: Counsel, we know nothing about the strength of the vessel, this man never saw it, we don't know whether the wood was good or rotten, we don't know whether the boat was held together with straps, you don't know what the condition of the ship was. If he can tell you, he is a wonder. If he did I would lose a lot of respect for the professor's ability.

Q. (By Mr. Silvers): Assume the height of the engine room in the vessel that you're looking at now, sir, to be approximately eight feet, about thirty feet long and about fifteen feet wide; assume the galley to be located on the main deck above that in the after portion of the vessel, as I have pointed out to you; how long would it take in time for any gasoline vapors formed in the engine room from approximately twenty to thirty gallons of liquid gasoline to make their way up a hatchway leading

(Testimony of David M. Mason.)

from the engine room to the galley as located in the photograph I have shown to you?

A. What type of distance are we talking about here in feet from the engine room up to the galley and what height?

Q. The engine room is eight feet, the galley is on the [473] main deck immediately above the engine room, the distance from the galley to the engine room itself is approximately twenty or twenty-five feet. Assuming that, how long would it take for gas vapors formed by a spill or leakage of liquid gasoline in the engine room to reach the area of the galley?

Mr. Nave: Same objection, if the Court please. Improper examination of this witness.

The Court: Overruled.

The Witness: All I could say in general is there would be a tendency, because of the high density of gasoline vapor, there would be a tendency for it to stay and cling to the lowest area in the ship and, therefore, barring any kind of circulation of the vapors the tendency for the process of going upward would be quite slow, and depending on the distance, the further away the longer the time.

Q. (By Mr. Silvers): Well, I have given you certain specific distances.

The Court: The professor hasn't finished. Go ahead.

The Witness (Continuing): I would say it would definitely depend on the distance-time, barring any, let us say, barring any kind of circula-



(Testimony of David M. Mason.)

tion at all. I can give a figure with respect to diffusion rates and you would find gasoline vapor under these circumstances traveling probably about a foot in the order of—traveling about a foot [474] per minute in this particular case.

Q. (By Mr. Silvers): I am asking you to assume certain figures and quantities and distances that I have already mentioned.

A. As I say, if there is a twenty foot distance this would take twenty minutes for the diffusion process to occur, assuming there aren't any barriers, just a straight laboratory experiment where you're following the rate of gasoline through air in a still system.

Q. The natural characteristic of gasoline vapors, however, would be to remain at the lower level rather than to ascend, isn't that correct?

A. Yes, but there is this diffusion process, this is another process I am talking about, where in spite of the density of the gasoline, it would have a tendency to move through the gas even against this gravitational field, and this occurs at the rate of roughly one foot per minute.

Q. But you said that is based on laboratory conditions?

A. That is correct.

Mr. Silvers: I have no further questions.



(Testimony of David M. Mason.)

Cross-Examination

By Mr. Nave:

Q. Doctor Mason, assuming that this photograph that was handed you, this fishing boat, that there is in this engine [475] room that has been described to you in those approximate dimensions——

A. Yes.

Q. ——that some sixty gallons of gasoline went into that engine room down into the bilge area.

A. Yes.

Q. Now, if you testified somewhere between approximately one per cent and seven per cent you have a flammable vapor? A. That is correct.

Q. That's correct? A. Right.

Q. And if you had 30 gallons, 40 gallons, 50 gallons, 60 gallons, or even a less amount, that went into the bilge in that engine room you would, in the process of a very few minutes, have a flammable range of vapors, wouldn't you?

A. That is correct.

Q. And you have stated to his Honor these vapors, due to their volatility, would rise and that if they came into contact with any source of ignition that would produce the degree of heat that you have stated, you would have an explosion, wouldn't you?

A. That is correct.

Q. If you had a flammable mixture of three to four per cent you would have a violent explosion, wouldn't you, normally? [476]

A. Depending upon the—for the explosion to

(Testimony of David M. Mason.)

propagate this mixture would have to be from one point five to six volume per cent. Wherever this mixture exists the source of the ignition will cause the spread of the explosion through this mixture, right.

Q. What I am getting at is the difference between—say you had one or one and a half per cent flammable vapors you would normally have a less violent explosion than if you had a three to a five per cent mixture? A. Yes.

Q. Isn't that true?

A. The maximum energy occurs at what we call the stoichiometric point which means, actually, the true point of balance between the exact amount of oxygen and the exact amount of fuel to burn the mixture completely. That would be the maximum. I think in this case it is around four per cent, it's right in the middle of this combustibility range.

Q. Now, assuming, Doctor, some thirty to sixty gallons of gasoline went down into the hold of this engine room of this ship. A. Yes.

Q. And assuming that there was a sudden flash in the area of the ship and a violent explosion that knocked its masts off and blew its superstructure off, it is an inescapable conclusion, is it not, that the gasoline that was in the engine room [477] exploded; isn't that true?

A. It is assuming there was some there?

Q. Assuming there was a concentration of gas.

A. And there was an ignition source, yes.

Q. It would show, you would assume then there

(Testimony of David M. Mason.)

had been a violent explosion within the inside of the fish boat?      A. Yes, correct.

Q. Now, this wind that Mr. Silvers was asking you about, assuming that you had a wind of three to five miles per hour that was blowing from this direction towards over the fishing boat and towards the dock——

Mr. Vartan: Mr. Nave, will you make an arrow when you say “this direction,” so we will know the direction?

Mr. Nave: Yes, the wind was blowing in this direction, south, southeast.

Q. (By Mr. Nave): Assume the wind was 3 to 5 miles an hour blowing in that direction. If you had any concentration of gasoline vapors spilled on the dock that wind would tend to blow those vapors away from the fishing boat, wouldn't it?

A. As I said earlier, there would be a tendency for the upper portion of the vapors to be blown away. However, there are always, as long as liquid gasoline, assuming there was liquid gasoline——

The Court: When the upper portion was blown away [478] wouldn't that be a tendency then for the lower portion to rise?

The Witness: Yes, it would rise, but as long as the liquid was there there would be in this area——

The Court: Wouldn't that also lessen the density of these vapors, make them less volatile?

The Witness: No, as a matter of fact, the more air you have, as I mentioned earlier, the more combustible this mixture is. You need 94 to 97.3 air

(Testimony of David M. Mason.)

in order to even have combustion, so that, true enough, this breeze coming over the desk top here, if this were covered by liquid gasoline, would hasten the vaporization process and would have a tendency to blow some of the vapor in the upper portion of the table away. However, right close to the table the velocity of the gas would go to zero.

So these vapors could still cling as long as there is any source of liquid gasoline present.

Q. (By Mr. Nave): By the same token, Doctor, assuming there is some 30 to 60 gallons of gasoline that had formed this flammable range inside the fishing boat and the fishing boat exploded——

A. Yes.

Q. ——in the manner I have told you, with the superstructure blown off and the mast down and this 3 to 5 mile an hour wind I have told you about, would that not tend to blow the inflammable vapors in the direction to which the wind was [479] blowing after which followed the violent explosion?

Mr. Silvers: Just a minute. I am not sure I understand the question, your Honor. I will object on the ground counsel has placed the inflammable vapors in his question inside the boat and he is now asking the witness whether the 3 to 5 mile an hour wind would blow the inflammable vapors away.

Mr. Nave: No.

The Court: Objection overruled.

The Witness: The question, as I understand it, that you asked was first you see the explosion and



(Testimony of David M. Mason.)

then you have the wind blowing the vapors after the explosion occurred. I am a little confused.

Q. (By Mr. Nave): I will reframe it this way, Doctor. Let's assume this fishing boat blew up.

A. Yes.

Q. And I told you there was some 60 gallons of gasoline down in the hold, or some large quantity, and the fishing boat blows up, there is a flash and a violent explosion.

A. Yes.

Q. Then you have a 3 to 5 miles an hour wind blowing in a southerly direction indicated here, would that not tend to blow the vapors that have been released by the explosion in the manner I have mentioned in the direction of the wind? [480]

Mr. Silvers: Just a minute, Doctor. Your Honor, I am going to object to the question in its present form on the ground that it is a misstatement of the evidence which is already in the case and assumes facts that are contrary to the evidence which is already in the case.

The Court: Overruled. It is cross-examination.

The Witness: Yes. Shall I wait until counsel is through?

The Court: Go ahead.

The Witness: In answer to your question I think what you have to hypothesize is that after this explosion occurred, that after this explosion occurred, there was still some unburned gasoline vapor. In other words, vapor that was in the wrong combustibility range would be ignited, which was



(Testimony of David M. Mason.)

present, which would then blow over. I think that is what you would have to assume.

Q. (By Mr. Nave): Now, if there was a white flash, a brilliant white flash right over the area where this fishing boat exploded—

Mr. Vartan: Just a minute, your Honor, that certainly assumes something not in evidence.

The Court: In the first place he hasn't finished his question. In the second place, this is cross-examination, so we will let him ask him anyway. Now, finish your question first. [481]

Q. (By Mr. Nave): Assuming what I assumed before, that there is some gasoline in the hold of this ship. A. Yes.

Q. That there is a violent explosion with a huge flash over the top of the ship, the masts fall down and the superstructure is blown off. A. Yes.

Q. That flash is fire, isn't it?

A. That is correct, it represents the high temperature combustion.

Q. That is the end result of the explosion?

A. Correct.

Q. Now then, again assuming a 3 to 5 mile an hour wind that I have mentioned, would that not blow the vapors that are burning in the direction of the wind?

A. Well, as I say, I want to make clear that—in other words, this white flash you see represents complete combustion of those particular gases. In other words, they are no longer capable of supporting combustion. As a matter of fact, in the ultimate

(Testimony of David M. Mason.)

you get carbon dioxide, water, which isn't combustible. So you must, in addition, say that somehow or other some of the gasoline which did not burn, in other words, it wasn't consumed in this white flash, is still left behind and is vaporizing, and I would say, in my opinion, the only possibility [482] of this occurring was some liquid remained behind that hadn't formed vapor of combustible limits that caused the first flash and this liquid could then be vaporized.

Q. Doctor, assuming a concentration of gasoline of some 60 gallons of gasoline, for example, and you have a flash, you don't mean to say that the entire body of gasoline is consumed in that flash, do you?

A. Yes, all that gasoline within the combustible limits is consumed and, as a matter of fact, due to the pressure wave created, even those gases present that are not in the combustibility range are usually stirred up so that the vapor would go on and burn subsequently. If there is liquid remaining behind—you see, the liquid, as I said earlier, itself cannot support combustion, no oxygen in the liquid gasoline, it has to go through a vaporization stage first before combustion can ensue. Presumably the liquid remaining behind could, in sequence, then be evaporated by this process you are mentioning.

Q. All right. Now, assuming further in the hold or in the engine room of this fishing boat that we are discussing there are Diesel tanks containing

(Testimony of David M. Mason.)

Diesel fuel. Assume there was a flash and explosion, isn't it true that the fumes and the Diesel fuel itself would be dispersed by the explosion?

A. Yes, the energy released from the explosion would tend to vaporize any liquid and hasten the vaporization process. [483]

Q. And those vapors released and the fuel released by the explosion would be combustible, wouldn't it?

A. It certainly would.

Q. And if they came in contact with fire they would ignite and burn, would they not?

A. They would.

Mr. Nave: I believe that is all. Thank you, Doctor.

The Court: Any further questions? I want to thank you very much.

Mr. Vartan: May we have our recess now?

The Court: Yes. How long do you want, gentlemen?

Mr. Vartan: Ten minutes, your Honor.

(Short recess.)

Mr. Vartan: Call Doctor Cox, please.

## WILBUR J. COX

called as a witness on behalf of the Libelants, having been first duly sworn to testify the truth, the whole truth and nothing but the truth, testified as follows:

The Clerk: Will you please state your name to the Court?

The Witness: Wilbur J. Cox. [484]

## Direct Examination

By Mr. Vartan:

Q. Doctor, you are a physician and surgeon?

A. I am.

Q. How long have you practiced your profession, please?

A. I was first licensed in California in 1926.

Q. What has been your medical training, please?

A. Graduated from the University of Indiana. I was in New York three years, trained at the Kings County Hospital, moved to Los Angeles and took a few years of orthopedic training there and then moved to San Francisco in 1932, took some orthopedic training at the University of California.

Q. Are you on the staff of any hospital?

A. Yes, part time teaching staff, University of California and various——

Q. In what field?

A. Orthopedics.

Q. Orthopedics. Has that been your specialty for several years?      A. Yes, sir.

The Court: Are you a diplomate, Doctor?

(Testimony of Wilbur J. Cox.)

The Witness: Yes, sir.

Q. (By Mr. Vartan): Doctor, did you examine Joseph Salmeri on April 5, 1957? [485]

A. I did.

Q. Prior to your examination did you take the customary history? A. Yes, sir.

Q. Will you please state what history you obtained?

The Court: Doctor, you didn't treat this man, did you?

The Witness: No, sir.

The Court: As a patient? You examined him simply that you might give an evaluation of his condition?

The Witness: Yes, sir.

Mr. Vartan: All right, your Honor.

The Court: Let him tell us what he found, what his opinion is.

Mr. Vartan: Yes, your Honor.

The Court: The prognosis.

Mr. Nave: May I have the date?

Mr. Vartan: April 5, 1957.

Q. (By Mr. Vartan): Doctor, what did your examination of this man show?

A. I would like, if you don't mind, to enumerate his complaints to me. Presently pain in the right shoulder, continues exercise of the right shoulder, also feels a clicking in the shoulder, a tired sensation in the forearm, steady pain in the forearm and elbow to wrist, occasionally has sharp pains [486] extending into the little finger, as well as the ring.



(Testimony of Wilbur J. Cox.)

He develops an ache in the arm with activity, soreness in the elbow joint.

I found that he had an old fracture of both bones of the forearm. The fracture of the radius is about four to six inches below the elbow joint. The fracture of the ulna bone was about at the same level. It was ununited. An operation had been performed on both forearm fractures. The fracture of the radius had united, but in my opinion the fragments were in position so that one fragment was rotated on the other.

In other words, there was a complete 180 degree twist of the radius of one fragment on the other.

There was also a complete severance of the extensor tendons of his thumb so that the patient was unable to move his thumb into a position of extension.

There was also a complete severance of the sensory branch of the radial nerve producing an anesthesia involving the dorsal radial surface of his hand extending out to the index finger and the thumb.

United fracture of the shoulder joint—not of the shoulder joint, but the collar bone. He had a satisfactory range of motion in the shoulder joint.

The gripping power on the left side, or his involved side, is markedly decreased—on the right side, I beg [487] your pardon, being 70, and on the left side, which was uninvolved, 155 plus.

As a result of my examination I felt that this patient was totally disabled from any type of labori-

(Testimony of Wilbur J. Cox.)

ous occupation and the disability was permanent and total unless some type of reconstructive surgery is performed. Reconstructive surgery would consist of a bone grafting operation of the ulna and an osteotomy of the radius and to derotate the united fragments of the radius in an attempt to restore rotation in the forearm.

He also needs either a tendon graft to repair the function of his extensor tendon, the tendon grafts to be taken from the flexor surface of his forearm and transplanted and the anatomical snuff box restored to contour. At the same time there would have to be a suture of the sensory branch of the radial nerve, either that, if you can't approximate it, he would have to have a nerve graft.

Q. Now, the bone graft that you mentioned was made necessary because of the fracture which you found was not united?           A. Ununited, yes, sir.

Q. Is there in his arm at the present time any artificial support or rod?

A. At the present time the rod has been completely removed, and if you wish me to, I can display this X-ray of the forearm. [488]

Q. Very well.

The Court: I have seen it. If you want to display it for yourself, you may do so.

Mr. Vartan: All right, fine.

Q. (By Mr. Vartan): Now, Doctor, what is the time element that would involve a bone graft to attempt to cure this fracture condition that has not

(Testimony of Wilbur J. Cox.)

united, how long would it take in hospitalization and recovery?

A. I would say this one of the real major difficult mechanical operations in orthopedic surgery because it entails repairing a bad job, and, of course, there is a certain amount of speculation connected with it and one cannot always guarantee any kind of a result, but I would say this, that barring complications, one could be reasonably sure that you could obtain bony union in the ununited ulna, but I am not at all sure how much rotation can be restored to his forearm by derotating his fragments because of the fixed position of the two joints which come into play in permitting rotation of the [489] forearm.

That is the joint in the elbow and the joint at the wrist, they work in unison, you might say, and one bone rolls over the other one, a joint up here and a joint up here (indicating).

Of course, if one fragment is rolled on the other one and united, it means that you cannot restore the rotation of the forearm, so this joint might be ankylosed and this might be disturbed to the extent that I can't say how much rotation could be restored.

Q. Now, the loss of the extensions of the thumb, loss of the use, you mentioned the extensors going to the thumb were severed? A. Yes, sir.

Q. What is involved in the possible repair of that situation?

A. Probably have to have a tendon graft or

(Testimony of Wilbur J. Cox.)

tendon grafts. Usually the long extensor tendon, which I am demonstrating here, is more or less like a bowstring, and passes to the ulnar side of the forearm, and when it is severed, one end retracts in the forearm like a bowstring. And in order to restore the power of that, one has to bridge the gap by a tendon graft by taking an accessory tendon from the flexor surface of the wrist or one from the foot or from the leg and the short abductor tendon would probably also have to have a tendon graft. And I think because the tendons are severed on the extensor surface of the wrist, there is reasonable assurance that one can [490] restore extension of the thumb.

Now, the radial nerve which passes the sensory branch, which supplies the dorsal radial surface of the hand and the index finger and thumb, possibly could be resutured without nerve graft, but sometimes if the gap can't be bridged, you have to take an accessory sensory nerve and bridge the gap.

Q. Doctor, did you examine his shoulder for any abnormality in the alignment of any bones of the shoulder where the fracture was?

A. Yes; the fracture of the collar bone has united, it is overlapped and shortened a little bit, but it has not really disturbed the mechanism of the shoulder joints too much.

Q. You say he complained of clicking. Did you examine him for that?

A. Yes; I felt clicking about his shoulder joint and I could not determine the nature of the clicking.



(Testimony of Wilbur J. Cox.)

Q. I see. Doctor, you examined on the same day a Frank Pedrasaz? Did you also examine Frank Pedrasaz on this same day, I believe?

A. Yes, sir.

Q. And what were his complaints to you, Doctor?

A. He informed me he sustained an injury to his right wrist and right ankle.

Q. Did he have any complaints in the area of the wrist [491] to you?

A. Yes, sir. He stated that he sustained a fracture, fracture of the right wrist, which required two different manipulations and reduction was unsatisfactory. So the third time an operation was performed and a graft was removed from his right iliac crest and transferred to the fracture site to serve as a bridge or trellis to support the other bony structures.

Also, the result of this fracture, he complained of numbness of the thumb, index and middle fingers, and periodic swelling of his hand, pain of the dorsal surface of his arm and forearm, especially with gripping, and loss of power in his hand.

He also had an injury to his ankle, right ankle, in which he stated that there was periodic soreness.

I found that he had a slight limitation of wrist joint motion, I would say between five and ten per cent.

On the flexor surface of the wrist there is a two and a half inch curved operative scar, slight tenderness when pressure was applied.



(Testimony of Wilbur J. Cox.)

The Court: What did you say that five per cent disability was, Doctor, that you rated?

The Witness: I beg your pardon?

The Court: The wrist, you say, was five per cent——

The Witness: Between five and ten per cent limitation [492] of motion.

On the extensor surface of the wrist, there is a healed oblique two-inch operative scar that was slightly tender to pressure. He flinched on the forearm when I percussed in that area.

The grip in his right hand measured, after three trials: Right 70; left 115; right 70; left 130; right 70, and left 130, being the normal, so figuring that the major right hand should have a greater grip than the left and the relationship being five-fourths, it indicates that he has about over 60 per cent loss of gripping power in that hand.

Q. (By Mr. Vartan): In your opinion——

Mr. Nave: What was that percentage?

The Court: You mean of the gripping power?

The Witness: Yes, sir.

Mr. Nave: What was the figure?

The Court: He says he has a loss of about 60 per cent gripping power of his right arm.

Q. (By Mr. Vartan): In your opinion, Doctor, is that condition permanent?

A. I think it is reasonable to assume that it is permanent, due to the fact that this operation was performed, well, let's see, I examined him in 1957,

(Testimony of Wilbur J. Cox.)

it had been probably about two and a half years since the operation. [493]

Q. Did he make any complaints with reference to the hip bone where the bone was removed?

A. Yes; he complained of tenderness over the operative scar, and one could feel a definite cupping of the iliac crest where the bone graft was removed.

Q. Now, did you find from your examination anything that you attributed to the complaint of numbness of thumb and index and middle fingers?

A. I thought that possibly there might be one of the minor branches of the sensory division of the radial nerve caught up in the operative scar. The operative scar is located right near the nerve. That could easily account for the numbness, and there is a local area of tenderness when that area was gently percussed with the tip of the finger.

Mr. Vartan: You may cross-examine.

### Cross-Examination

By Mr. Nave:

Q. Doctor Cox, in the case of your examination of Mr. Salmeri, first, please, you were talking about a decrease in the right-hand gripping power. You said that was 70 per cent, am I correct in understanding that?

A. I believe that I stated that on Mr. Pedrasaz, the last one——

Q. No; I am speaking now of Mr. Salmeri, the gentleman you examined first. [494]

(Testimony of Wilbur J. Cox.)

A. Yes, sir.

Q. Did I understand you to say there had been a decrease in gripping power in his hand, his right hand, of 70 per cent?

A. I think you misunderstood.

Q. I probably did, the reason I am asking you. I am trying to clarify it.

The Court: He said Pedrasaz, the man who had the broken wrist.

The Witness: Yes. On Salmeri I quoted his gripping as 155 plus.

The Court: Broken radius and ulna.

The Witness: That was 155 left and 70 in the right.

Q. (By Mr. Nave): 155 plus in the right hand?

A. No; in the left.

Q. Left. All right. And what—

A. And 70 in the right.

Q. Now, when you say 70, what do you mean by 70?

A. Pounds pressure per square inch when you grip.

Q. What would be normal?

A. Well, the normal, I would have to figure that from the normal, because if he is able to grip 155 plus in the left hand, you would take one-fifth of 155, which would be about 37, and add it onto it, so it would make the normal grip in his right hand about 190, so he has got about 65 to 70 per cent loss of [495] grip in the right hand.

Q. Now, that loss of grip, 65 per cent loss of

(Testimony of Wilbur J. Cox.)

grip in his right hand, is attributable to what, what is the malfunction there, or the disturbance that causes that loss of grip?

A. Well, number one, loss of function of the forearm bones, that is, the lack of stability and the lack of position of the arm when attempting to grip. It takes, for instance, if he is in this position (indicating), he cannot grip fixed in this position. He can't grip as well as if he can turn his hand over and grip in this position. You see?

Q. It comes from inability to rotate?

A. That's part of it only, that is part of it only.

And then the third thing is the soft tissue injury to the muscles of the forearm, especially the ones on the flexor surface which arrive and come down here and attached to all the tendons. And I would say that in practically every case of a fracture of the forearm in an adult, there is a minimum loss of ten to twenty per cent loss of grip, even though the bones are imperfect apposition, which represents a soft tissue injury.

Q. You stated, I believe, sir, that some type of corrective operative procedure would be indicated that would give some relief to this loss of grip in the right hand?

A. No; I beg your pardon; it might help the grip to some extent, but the main reason was to give him stability on the [496] side where there wasn't union in the ulna and on the opposite side to de-rotate the fragments so that there would be some semblance of rotation in his forearm.

(Testimony of Wilbur J. Cox.)

In other words, the fragments are united, this fragment is united with the palm down, you see, and the upper fragment is turned up the other way; it would mean that he couldn't roll his arm, see?

Q. I understand. If an operation were performed, what effect would that probably have on the percentage of grip restoration of some of the percentage of normal grip?

A. I can't say. It possibly might increase it a little bit, maybe five to ten per cent, but I can't say. That would be speculation.

Q. I understand. The left hand, you say, was 155?

A. Yes, sir.

Q. You consider that normal?

A. Yes; I would call that normal.

Q. You mentioned the fact that the rod in the arm had been removed at the time of your examination?

A. Yes, sir.

Q. And that in connection with that arm there was a lack of bony union, there is a fragment on a fragment, if I understood you correctly?

A. Yes; there is a distinct space where there is a lack of apposition of the fragments. You can see right through it. [497]

Q. Yes.

A. Here, this shows it if you wish to see it.

Q. Yes; I would like to see this.

A. This is the bone which is involved. See, you can see right through it. See, it should be one solid affair, like this, but here in this fracture you can see right through it.



(Testimony of Wilbur J. Cox.)

Q. Now, this bone that shows in the X-ray, the X-ray that shows the fracture in that position is called what bone?      A. That is the ulna.

Q. You stated that in that case surgery or an operation is indicated. What would that entail? Is that a question of resetting, is it breaking and resetting, or how is that operation performed?

A. It is a question of making an incision exposing the fracture site on this side, on the ulna side of the forearm, exposing the fracture site by subperiostum section, curette it, expose the broken ends, and drill the ends to bring in new blood supply, and then one has a choice of a grafting material, you can remove it from the shin or from the iliac crest, some doctors have a bone bank to transplant the bone, but I find that a graft from the same subject is better, and you apply that as a plate across the fracture site and fix it in position with four stainless steel screws, two placed above and below the fracture site and opposite the graft, some men chose to apply a stainless steel plate or vitallium [498] plate for stability, for additional stability, and this will serve to hold the fragments and stabilize them while bony union takes place.

The Court: And then you say your prayers?

The Witness: We say our prayers and pray we don't get an infection.

The Court: It is a kind of a dangerous operation. It's major surgery?

The Witness: I would say it is one of the great technical procedures in orthopedic surgery.

(Testimony of Wilbur J. Cox.)

Q. (By Mr. Nave): Now, Doctor, the next thing you mentioned, if I understood you correctly, was you stated, I believe, according to my notes, that there was a need for a tendon graft to restore the use of the thumb, is that what you said?

A. Yes, sir. He has what is known as a thumb drop. In other words, the thumb drops into the palm of his hand.

Q. Yes. Because of that, what happened there that causes that?

A. Years past they used to call this anatomical snuffbox and they used to put snuff in there and sniff it, and the long tendon of the thumb extends, the distal end of the distal phalanx, the short extensor, extends this portion of the thumb, so with both of them severed, you developed what you call a thumb drop. In other words, they can't pull their thumb out of [499] their palm. In order to restore this function, one has to bridge or return this extensor power, connect it up with the muscle which controls this tendon, and due to the fact that it is a strain, the possibilities are that the muscle has shortened to the extent that you would not be able to approximate it proximately without undue tensions, so it would mean that he would have to have a tendon graft, that would be number one, or the transplantation of an accessory tendon into this tendon in order to restore the power, and an additional graft in this area or a tendon transplant to restore function in the other one.

Q. Then I believe the final thing you mentioned

(Testimony of Wilbur J. Cox.)

was in connection with the fractured collar bone. I believe you stated it had united?

A. Yes; it had.

Q. And you found nothing there that required any restoration?

A. Except a bulge, which is not an uncommon finding as a result of a collar bone fracture. He did have some clicking in his shoulder, but I found normal range of voluntary motion, so I don't think one has to worry too much about that.

Q. Well, to put it another way, Doctor, you found nothing in the collar bone situation that would be called disabling?

A. No; I wouldn't think so.

Q. Now, in your examination of Mr. Pedrasaz, you were [500] speaking of a five to ten per cent limitation in the wrist?

A. Yes, sir.

Q. Limitation of motion. That was in the right wrist, is that right, sir?

A. Yes, sir.

Q. And the grip in the right hand was what?

A. 115-70; 130-70; 130-70.

Q. 70; that is pounds, you mean?

A. Pounds pressure per square inch.

Q. As compared to what figure is normal?

A. 130.

Q. Compared to 130. 70 over 130 of normal, is that right; 70 over 130 of normal, is that right?

A. No, no, no. 130 is his normal grip.

Q. That's pounds?

A. Pounds pressure per square inch.

Q. That's right.

(Testimony of Wilbur J. Cox.)

Mr. Vartan: That is the left hand.

The Witness: That is his left hand.

Q. (By Mr. Nave): That's the left hand, all right.

A. Now, gripping power, assuming that he did not have an injury, would be one-fifth greater in the right hand.

The Court: Assuming he was right handed.

The Witness: Yes, sir; assuming he was right handed [501] be one-fifth greater. So his grip should be around 155 in the right hand. So if 155 is his normal, and his present grip is 70, that gives him over a 50 per cent loss of grip; I would say 60 per cent.

Q. All right. Now, the grip in the right hand you determined to be 115, is that right, now?

A. No, no; that isn't right.

Q. Grip in the left hand is 115, am I correct now? A. Grip in the left hand——

The Court: 130.

The Witness: 130.

Q. (By Mr. Nave): 130. And you say that 130 isn't normal, it should be 155?

The Court: The right hand. The right hand has greater power than the left hand. For gripping purposes, assuming that the man is right handed, because I guess, Doctor, from constant use and exercise, it is better developed.

The Witness: That is right.

Q. (By Mr. Nave): Is there any operational procedure that is suggested in reference to this grip-



(Testimony of Wilbur J. Cox.)

ping loss, gripping power?           A. No, sir.

Q. And the operation you mentioned, that you felt was indicated, was in reference to a complaint of numbness in his [502] thumb and fingers?

A. Yes, sir.

Q. Did you state, sir, that you felt that an operation was indicated to relieve that?

A. One could explore the sensory branch of the nerve to see whether it is partially severed or whether there is a stitch or scar in the way. Inject it in a salt solution to see if it has been severed.

The Court: It would be best to leave it alone, wouldn't it? It would be best to leave that thumb alone?

The Witness: Well, it depends on how much it disturbs him. I wouldn't want to guarantee such a thing. I don't guarantee anything in operative work, but I think you have to depend on the patient.

Q. (By Mr. Nave): Assuming that the patient was getting along all right, was able to be steadily employed, you wouldn't normally advocate such an operation, would you?

A. No; I wouldn't advocate such an operation, but if he would come to me and said, "This numbness is really disturbing me, it is annoying me, and I would like to have you—I am willing to take a chance to try and restore that," I would say that would be an indication.

Mr. Nave: Thank you, Doctor.

Mr. Silvers: No questions. [503]

Mr. Vartan: No questions.



The Court: All right. Thank you, Doctor. I was very much impressed with your testimony.

The Witness: Thank you.

(Witness excused.)

The Court: I think the Doctor's appraisal was extremely fair.

Mr. Vartan: Your Honor, one of the respondents is the Estate of Frank Cardinale, Mr. Silvers' client, and I have asked him to stipulate that under our California Probates Procedure that we have filed the claim and notice of action and all the matters have been duly taken care of, so that we don't have any technical claim as to the maintenance of the action.

Mr. Silvers: That is agreeable.

Mr. Vartan: Very well.

On the question—these things are sort of up in the air, your Honor—we have checked, and I told Mr. Nave it was 348 or say 350 Francs per dollar at the time mentioned in the deposition of Mr. Jacques Cardinale's widow, and we would like a stipulation as to that so we don't have to bring in anyone.

Mr. Nave: I don't know, counsel, and, your Honor, it is probably correct, but I would like to check to satisfy myself. I am sure the information you have is correct, but I [504] want to check it.

The Court: In one of the interrogatories propounded to her, she received about 200,000 Francs in 1954, but that before her husband left, he left her other funds.

Mr. Vartan: We have a hospital bill from the

Monterey Hospital on Joe Salmeri coming and which we will introduce later.

Now, do I understand your Honor will recess, you said something about this afternoon.

The Court: I want to do whatever you gentlemen want. You have been very accommodating, but the case has to be completed next week, you know.

Mr. Vartan: Yes.

The Court: If you want to recess now until Monday morning, and it is agreeable to everybody so that you can go over and examine the questions of law which I have pointed out to you are presented here, I am willing to do that. We have a very substantial question of law here. There doesn't seem to be too much liability of the Union Oil Company, or the basis of liability, which is asserted here by the libelants. There is practically no factual issue, no substantial factual issue as to the conversation which took place between Cardinale and Caldwell aboard the ship at the time the ship pulled up.

The question of law raised is whether or not, as I [505] see it, in the exercise of reasonable care and prudence, Cardinale had a right to expect, or those aboard the ship, not Cardinale, because he was bound to exercise a certain degree of care himself, whether those who were strangers to the transaction that were aboard the ship, had the right to expect the one who was dispensing gasoline from the dock under those circumstances would keep a watch of the gauge and keep a watch of the outpouring or delivery of the quantity of gasoline and whether or not, if he didn't keep such a watch and an explosion

occurred as a result of leakage aboard the vessel, or from any other cause, whether or not that would be sufficient under which to find negligence on his part.

I can't find any case in point. If you gentlemen want to research that problem, I will be glad to have you do it and hear you next week on it.

Mr. Vartan: I was wondering if we could see your Honor in chambers on another question of witnesses.

The Court: We will go into chambers and we will adjourn until 10:00 o'clock Monday morning.

Now, gentlemen, we are going to be through with this case next week.

Mr. Silvers: Before we adjourn, may I ask your Honor this:

The Court: Yes.

Mr. Silvers: Are there more witnesses to be produced [506] by the libelants?

Mr. Vartan: That is what I want to take up with you gentlemen in chambers.

The Court: All right.

(Whereupon, this matter was adjourned until Monday, September 9, 1957, at the hour of 10:00 o'clock a.m.) [507]

September 9, 1957—10:00 A.M.

The Clerk: Salmeri, et al., vs. Cardinale, et al., and consolidated cases, for further trial.

Mr. Vartan: If your Honor please, we have the two statements from the Monterey Hospital.

The Court: That is Salmeri?

Mr. Vartan: Yes, your Honor. Let the record show that I have shown counsel two bills, one showing the balance due—well, the bills speak for themselves. They total \$360.

The Court: Have you the hospital records from the Monterey Hospital?

Mr. Vartan: No, your Honor.

The Court: Any objection to the receipt of these bills in evidence?

Mr. Nave: No, your Honor.

The Court: Is it conceded these bills are reasonable in amount and were proper charges for the care and treatment of this libellant?

Mr. Silvers: Yes, your Honor.

Mr. Nave: Yes.

(Bills admitted above admitted into evidence as Libellants' Exhibit 12.)

The Court: Do I correctly read these bills [508] as totaling the \$254.83 plus \$105.67? Is that correct?

Mr. Vartan: That is what I understand, your Honor.

The Court: \$360.50, then, as I total the total charges of the Monterey Hospital, is that correct?

Mr. Vartan: Yes, your Honor.

The Court: And you have no hospital records for that period of treatment?

Mr. Vartan: No, your Honor. We asked for them. We are going to telephone, but I think the history was shown.

The Court: All right.

Mr. Vartan: With that, your Honor, the libel-

ants, Salmeri, Pedrasaz, Belleci, and Belleci as administrator of the estate of the widow and children, rest their cases.

The Court: All right. Now, how do you want to proceed? Who wants to proceed first, which one of the respondents?

Mr. Nave: I will, I think, your Honor.

The Court: All right.

Mr. Nave: Mr. Del Rio.

### RUDY DEL RIO

called as a witness on behalf of the respondents, being first duly sworn, testified as follows:

The Clerk: Will you please state your name to the Court, sir?

A. Rudy Del Rio. [509]

### Direct Examination

By Mr. Nave:

Q. Your name is Rudy Del Rio?

A. That is right.

Q. How old are you, Mr. Del Rio? A. 31.

Q. And where do you live? Where is your home?

A. Avila Beach, California.

Q. How long have you lived there?

A. Approximately four years now.

Q. Mr. Del Rio, were you in Avila on the day there was an explosion on the fishing boat Santa Lucia in September, 1954? A. Yes, sir.

Q. And at that time what was your work or occupation? Who were you employed by?



(Testimony of Rudy Del Rio.)

A. I was employed by Tony Sylvester.

Q. And what kind of work were you doing?

A. Diving. Abalone diving and salvage work.

Q. Now, on the afternoon of this explosion in September, 1954, did you hear an explosion at that time?

A. Yes, sir.

Q. And where were you when you heard an explosion?

A. I was on Front Street in Avalon.

Q. Now, Front Street, in reference to the ocean or the bay there, does that mean it was fronting the bay? [510]

A. That's right, sir.

Q. And how far were you away from the Union Oil dock or wharf at the time you heard the explosion, approximately?

A. Well, I don't know how far it is out there, but I would say possibly 600 yards, 500 yards, something like that.

Q. And did you hear more than one explosion?

A. No.

Q. You heard one explosion?

A. Yes.

Q. Can you describe the kind of noise you heard?

A. Well, it sounded like a plane going through the sound barrier, same kind of shocking explosion.

Q. Did you make any observation at that time out in the vicinity of the fishing boat Santa Lucia?

A. Yes.

Q. Will you just tell the Court what you saw at that time?

A. Well, I seen debris falling after the explosion and I seen smoke, black smoke, dark smoke, and then possibly a minute or so later I seen fire.

(Testimony of Rudy Del Rio.)

Q. Now, when you heard this explosion did you look out in the area of the fishing boat Santa Lucia?

A. Yes.

Q. Did you see any fire at that time any place?

A. Not right at the blast period, no.

Q. Were you able to determine or see where this debris was [511] coming from following the explosion?

A. Well, it was falling from the ship, so far as I could see.

Q. Then following that observation, hearing the explosion, at a later time you saw the fire, is that correct?

A. Yes.

Q. Where did you first observe flames or fire at any time in that area?

A. It was on the water. There was debris that was floating on the water. It was in the debris.

Q. And what did you do next?

A. Well, we jumped in a pickup and we went to the third pier to get on a boat to go render help.

Q. Now, you mentioned the third pier. What do you mean by "third pier"?

A. Well, there is three piers, the county pier, the Union Oil pier, and the third pier is the old Fort Sam Lewis Pier, I believe it is. Anyway, there's three piers there and it's the farthest one down to the west, and that is where our diving boat was anchored.

Q. What was the name of the boat?

A. Diving Bell.

(Testimony of Rudy Del Rio.)

Q. The Diving Bell? Is that the boat you worked on in the capacity of an abalone diver?

A. Yes. [512]

Q. Did the Diving Bell go to the scene of the fire? A. Yes; we did.

Q. And when you got to the area what did you observe at that time?

A. Well, the whole pier was on fire. Not the whole pier, but the section there, the loading terminal, was on fire, and the water and ship and everything else seemed to be engulfed in flames. That part of the ship that was above water all seemed to be burning.

Q. And what was the condition of the fishing boat? I mean by that, did it show any evidence of being broken or——

A. (Interposing): Oh, yes; the cabin section was floating in the bay there, next to the stern of the ship which was still out of the water. It never did actually sink there. The stern of it was above water.

Q. The stern was above water? A. Yes.

Q. And did you engage in fire-fighting activities, then? A. Yes; I did.

Q. That was aboard the Diving Bell?

A. Well, we came in on the Diving Bell and boarded the Union Oil tug Avalon and helped there as much as we could.

Q. Did you at any later time go to the Union Oil Company wharf or dock in the area of the serv-

(Testimony of Rudy Del Rio.)

ice station, the marine service station [513] installation?

A. Yes; after the fire we went up there.

Q. And did you observe the Diesel tanks and gasoline tanks on the service station dock at that time? A. Yes, sir.

Q. Could you determine whether or not, or did you make any observation whether or not those tanks were blown up or ruptured?

A. No, sir; they were still there in good shape, so far as I could see. Charred a little bit by fire burns, but so far as I could see there wasn't any cracks or anything like that on them.

Q. Now, did you have occasion at a later time to dive, make a dive into the wreck of the fishing boat Santa Lucia?

A. Yes; I did. I believe it was the following day.

Q. The following day? And at whose request did you do that? A. Dutch Van Haraveld.

Q. Who is Mr. Van Haraveld?

A. He was at that time an engineer for the Union Oil Company.

Q. This diving operation was conducted by you and someone else?

A. By Dutch Van Haraveld and Tony Sylvester.

Q. Did you procure or obtain a diving suit of some type?

A. Yes; a regular commercial abalone deep diving suit, deep gear. [514]

Q. And did you receive any instructions from

(Testimony of Rudy Del Rio.)

anyone as to what they wanted you to do or ascertain in making this dive?

A. Yes. Mr. Van Haraveld wanted to know the condition of the ship, and mainly the engine room section, and he wanted to know whether I could find some tanks, the fuel tanks, whether they were still intact or out or in condition, and I never did see anything like that.

Q. O.K. Now, did you—first, let me ask you, in what depth of water was the fishing boat Santa Lucia when you made the dive?

A. Approximately twenty-seven feet.

Q. And in what area was it in reference to the—I call your attention first to a sketch, Libelant's Exhibit 2, showing the service station offset and the Santa Lucia. Can you tell me whether or not the wreck was in that area or whether it was in a different position when you made the dive?

A. No; it was a little away from the pier at that time.

Q. And you say in twenty-seven feet of water? I assume you mean from the top of the water down to the bottom?

A. That's right.

Q. In other words, twenty-seven feet of water was in the area, approximately?

A. That is right.

Q. And did you go down alone or did someone accompany you?

A. No; I went down alone. [515]

Q. Just tell the Court, if you will, please, what



(Testimony of Rudy Del Rio.)

you did and what you saw when you made that dive.

A. Well, I came down and went in the bow section of the ship, and it was—the bow was split open. I walked in through there and I went down in the engine room section there, and there was a lot of debris there. There were some pieces of metal and ropes and boards and a lot of debris.

The ship was moving with the swell, and it was very murky and muddy down there and visibility was practically zero.

The Court: Were you able to get into the bow of the ship, below the deck?

A. Yes. I was right down on the bottom of it, bottom of the ship itself.

Well, I thought it was kind of dangerous in there, since I couldn't see what I was doing, and I couldn't see anything anyway and there wasn't any use in going in there, so I backed out and got out on the bow again on the port side, that would be. She was tilted in this position down.

I climbed through here like this, and the port section about four feet above the waterline was all ripped off clear up to about midships; and the starboard side was split in the bow, and the starboard side of the ship was leaning over like this. Well, it was almost coming off.

There was no deck up to about midships, or right off the cabin. There was no deck at all. Well, it was about [516] that time that I came up, and that was about it.

(Testimony of Rudy Del Rio.)

Q. (By Mr. Nave): All right. How much visibility did you have while you were down there?

A. Well, it all depends on what part. Down below in the hold, in the engine room part there, the visibility was—well, there was none hardly. You could feel things and maybe get up to within a foot from it and tell what it was. When I climbed up above the murky, muddy bottom, why, visibility was around three or four feet.

Q. Did you see any tanks, any gasoline tanks or Diesel tanks, at all in your inspection?

A. No. No; I didn't.

Q. You were unable to ascertain whether they were there or, if they were, what their condition was?

A. No. I don't know whether they were or weren't.

Q. Did you go down again? Did you make another dive?

A. Yes; I went down, I believe, the following day.

Q. And for what purpose did you go down the next day?

A. To see if I could find the bodies.

Q. Did you find any bodies? A. No.

Q. Now, on the second dive were you able to see any gasoline tanks or any tanks of any kind aboard the fishing boat? A. No, sir.

Q. Did you bring anything up—— [517]

A. (Interposing): No, sir.

(Testimony of Rudy Del Rio.)

Q. —from the fishing boat with you either on the occasion of the first dive or the second dive?

A. No, sir.

Q. Did you bring any part of any equipment that had been on the ship or that had been on the dock?

A. No; nothing at all.

Mr. Nave: You may cross-examine.

### Cross-Examination

By Mr. Silvers:

Q. Mr. Del Rio, you were down on these diving efforts on two separate occasions, is that right?

A. That is right.

Q. Was the first time the day following the explosion?

A. I don't remember that. I know it was shortly after that. It might have been the second day or something like that. I don't remember.

Q. And whether it was the first or second day following the explosion, was the second time you went down the day following the first time?

A. That is right.

Q. Your instructions were received from Mr. Van Haraveld?

A. That is correct.

Q. How long were you down the first time all in all, according to your estimation? [518]

A. Well, the first time I was down about a half an hour, and the second time, which was the following day, possibly around the same time.

Q. Going back to the time preceding your dive,

(Testimony of Rudy Del Rio.)

when you first became aware of this explosion, you told us at the time of the blast when you looked toward the gas dock you were unable to see any sign of a fire at that time, is that correct?

A. Yes.

Q. Was your view obscured by smoke at the dock site? A. Well, yes; there was smoke, yes.

Q. Did you say the color was black or brown—dark brown? A. It was dark.

Q. It was a dark color? A. Yes.

Q. Did it seem to obscure most of the gas dock itself as you looked toward it?

A. Yes; it kind of made it that way, yes.

Q. You were able—and I am referring now to the time when you first turned to look in the direction of the blast—you were able at that point to see the Santa Lucia, were you not?

A. Part of it, yes.

Q. Which part?

A. Well, pretty hard to tell. I just seen part of it. The stern—the bow was already going down, and it was—the [519] only part actually that I could see was the floating cabin that was there and the stern.

Q. You carried with you no means of illumination when you went down on your dives?

A. No.

Q. I am not familiar with diving details. Is it possible at that depth to take some sort of marine flashlight, or whatever you call it? A. Yes.

Q. And that is, I suppose, a fairly commonplace piece of equipment, is it not?

(Testimony of Rudy Del Rio.)

A. Well, a light down there wouldn't have done a bit of good.

Q. You mean by that that it would not have been able to penetrate the kind of darkness that you were finding down there?

A. That is right. It was muddy water.

Q. Yes.

A. The bottom there is all mud and when you walk on it you sink approximately up to your ankles. If you stand there in any one spot for a minute, you will find that you are halfway to your knees.

Q. This is if you are standing on the mud bottom itself? A. Yes.

Q. But the ship and its remains were resting on that mud bottom? [520]

A. That is correct.

Q. You entered the ship, if I understood you correctly, through a split in the bow? A. Yes.

Q. You were then, were you, standing on the deck?

A. Well, yes. I was not on the deck. It would be——

Q. Withdraw that. I mean you were standing, were you not, on the deck of the engine room?

A. Yes. Yes; I was.

Q. And it is your recollection that you were still unable at that point to see more than—well, I think you said your visibility was just about zero at that point? A. That is right.

Q. And you could only become aware of objects by touching them or bumping into them, is that



(Testimony of Rudy Del Rio.)

right?           A. That's right.

Q. And it is your theory that under those conditions a marine flashlight would not have aided you at all in seeing what was around you, is that correct?

A. No; the open bow of the ship was doing like an accordion—like with the swell of the ocean, and it had been gushing and creating a turbulence and bringing up this mud from the bottom.

Q. Was the condition of visibility essentially the same on your second dive the next day?

A. Yes. [521]

Q. I think you said in the area above the engine room you did have visibility of some three or four feet?           A. Yes.

Q. Now, exactly what area are you referring to?

A. Well, visibility was better anywhere above six feet from the bottom. It was better there because the mud wouldn't come up that far under those conditions. Where I was able to see and feel my way around was on the port side of the Santa Lucia. In other words, I was climbing up on it above the bottom and climbing along the port side clear along about amidships.

Q. Do you know whether at any time as you were proceeding in that direction, in this area, do you know whether you were actually at any part of the main deck on the port side of the vessel?

A. No; there wasn't no deck.

Q. I thought you said—I may have misheard

(Testimony of Rudy Del Rio.)

you—I thought you said you don't recall finding any deck up to about midships. Is that correct?

A. That's right.

Q. Did you go beyond the midship point?

A. No.

Q. Was there deck beyond the midship point?

A. Yes. Yes; there was.

Q. I take it you informed Mr. Van Haraveld at the conclusion of your first dive that the visibility conditions were so bad [522] so far as the engine room was concerned that you were unable to make out anything, is that right? A. That is right.

Q. And, of course, you told him you hadn't found any gas tanks or fuel lines or anything he had asked you to look for?

A. No, sir; I did not find any.

Q. How long did the Santa Lucia remain in that area?

A. Well, I don't remember. I know it was there, oh, possibly a week or something like that.

The Court: Was it towed away then?

A. Yes; then it was towed away.

Q. (By Mr. Silvers): Do you know who towed it away, Mr. Del Rio?

A. Well, I believe it was the Army Engineers or some outfit like that.

The Court: Was it ever floated, do you know?

A. It never did sink there in the Bay. The bow was on the bottom, but the stern was afloat and when it was towed out—when they towed it out of there, I imagine the bow was still dragging the bot-

(Testimony of Rudy Del Rio.)

tom as they towed it away, because it was in the same position, headed down in this position with the stern up. I don't know if they floated it up any further to tow it out or not, but I know it never did go all the way down while it was in the Bay.

Q. (By Mr. Silvers): Did you ever observe on either [523] of these two diving efforts the section of the portside of the main deck of the vessel anywhere in the area of the wreck?

A. On the portside?

Q. I am referring to the deck you found missing when you were actually in the boat. Did you see it floating around anywhere, or what appeared to you to be that portion of the deck?

A. No, sir; there was no deck on either the port or starboard side up as far as midship.

Q. Did the deck aft of that appear to be relatively intact?

A. Yes; as far as I could tell, yes.

Mr. Silvers: Thank you.

The Court: Have you any further examination?

Mr. Vartan: Just one question, your Honor.

#### Cross-Examination

By Mr. Vartan:

Q. Did you ever see the crew of the Santa Lucia after the blast?

A. I seen them in a little lifeboat, going toward the County Pier right after the blast.

Q. Did you see them getting off of the Santa Lucia into the lifeboat?

(Testimony of Rudy Del Rio.)

A. No; I didn't see them getting off, no.

Q. So you don't know whether there was flame on the Santa Lucia at that time or not, do you?

A. Well, I don't know what time they got off of there. [524]

The Court: When you went underneath and inspected the ship under the water, did you find evidence of fire aboard?

A. No.

The Court: I don't mean did you find flames. Did you find charred wood aboard the ship?

A. No. No; I didn't see any charred wood at all.

Q. (By Mr. Vartan): Mr. Del Rio, by the way, did the man from Union Oil who asked you to dive ask you or instruct you to look for any gasoline or Diesel oil nozzles belonging to the gas dock?

A. No, sir; I don't recall that. No; he told me to go down and see the condition of the ship and see about these fuel tanks.

Q. I see. Are you familiar, Mr. Del Rio, with the depth of the water right at the edge of the gas dock? A. Yes.

Q. Will you tell us what that is?

A. Well, it varies with the tide, but it is usually right around twenty-five or thirty feet.

Q. Now, I show you a group of Respondent's Exhibit K, which purports to be the condition of the gas dock after the explosion. Now, you testified that the tanks were in good shape, and so forth. Is that the condition in which you observed the gas lock? A. Yes. Yes. [525]

(Testimony of Rudy Del Rio.)

Mr. Vartan: I think you have seen these, your Honor?

The Court: Yes.

Q. (By Mr. Vartan): How long did you say the Santa Lucia was there before it was towed away?

A. Well, now, you can't quote me on that. I don't really know. I am just guessing. I know it was there several days.

Q. All right. During the several days that you know it was there it was in the vicinity of the Union Oil wharf, was it not?

A. Yes.

Q. Were you instructed to examine the vessel after it was towed away?

A. No, sir.

Q. Do you know where it was towed to?

A. Out in deep water, is all I know. I don't know where.

Q. Well, you don't know whether it was towed out into deep water or not of your own knowledge, do you?

A. Well, the thing is that they certainly wouldn't sink it in shallow water. I know it had to go out in deep water to be sunk.

Q. Well, I had in mind, Mr. Del Rio, possibly it was towed in and salvage made of it; do you know that of your own knowledge? I mean, do you know if the engines were recovered or things of that kind? [526]

A. No. No; so far as I know the engine, as a matter of fact, is still sitting right there where it blew up.



(Testimony of Rudy Del Rio.)

Q. You mean in the deep water?

A. No; it's there right near to the Union Oil pier. The engine was there.

The Court: The engine fell through the hull?

A. The engine come out, came off the ship, and it is laying on the bottom. I did see that engine on my second dive there.

Q. (By Mr. Vartan): Now, the second time that you dove——

The Court: Excuse me. Did you note the relationship of the engine as it lay there on the bottom with reference to the hull of the ship?

A. It was right in front, right in front of the bow and possibly, oh, fifteen feet ahead.

The Court: Fifteen feet forward of the bow?

A. Yes.

The Court: And did you notice its relationship to the stem of the ship, the stem of the ship, the front of the bow?

A. Well, it was right in front of it.

The Court: Was it over toward the dock or away from the dock?

A. No; it was away from the dock.

The Court: Toward the starboard side of the harbor? [527]

A. That's right.

The Court: About how far away from the stem of the ship was it?

A. Just about fifteen feet, sir.

The Court: All right.

Q. (By Mr. Vartan): Mr. Del Rio, when you

(Testimony of Rudy Del Rio.)

dove the second time, I believe you said to look for the bodies, what area did you dive to to look for the bodies?

A. I went all around there, all around the area there about 150 feet in circumference.

Q. Were you near the pilings of the gas dock?

A. Yes; I was near them.

Q. Was visibility good? A. No.

Q. Did you have a light? A. No, sir.

Q. Were you walking or swimming?

A. I was walking on the bottom.

Q. Occasionally did your feet touch any hard objects on the bottom in the mud? A. Yes.

Q. And did you pull those up and look at them to see what they were?

A. No. They might have been blocks or something. I don't know. [528]

Mr. Vartan: That is all.

A. I know I kicked a bucket once.

Q. You kicked a bucket at one time?

A. Yes.

Mr. Vartan: That is all.

### Recross-Examination

By Mr. Silvers:

Q. Mr. Del Rio, I am going to show you——

Mr. Silvers: Counsel, I am referring to this, which you have a copy of.

Q. I am going to show you a photostat of a type-

(Testimony of Rudy Del Rio.)

written document which bears the signature "Rudy Del Rio." Is that your signature?

A. Yes, sir.

Q. Did you make a report of your inspection by diving to the Union Oil Company, and does this statement which I have showed you contain that report?

A. Yes, sir.

Q. Are those your words in the report or somebody else's?

The Court: Counsel, it is my practice once a paper is shown to the witness to have it marked for identification.

Mr. Silvers: Yes, sir. Thank you.

The Court: I suggest you have this document marked for identification. [529]

(Typewritten statement of witness Del Rio marked Respondent's Exhibit M for identification.)

Q. (By Mr. Silvers): I notice that this document, Mr. Del Rio, is signed, and underneath the signature is the date November 3, 1954, is that right?

A. Yes.

Q. And then under the date line is the signature, "Donald J. Van Haraveld"? A. Yes.

Q. That is the Union Oil man who instructed you to make the dive? A. Yes.

Q. All right. And did he ask you when you came back to give him a full report of everything you found? A. That is right.

Q. And this statement contains that?

(Testimony of Rudy Del Rio.)

A. Yes.

Q. Now, I was curious, Mr. Del Rio, to ask you this: Why is there no reference at all to the second dive in this statement?

A. Well, I don't think that the same people requested me to go down the second dive. I don't really know who it was, or anything, but I worked for Tony Sylvester and I got my orders through him, and I don't know who it was requested I go down the second time. [530]

The Court: Do you intend to offer that in evidence?

Mr. Silvers: We will offer this in evidence, yes, your Honor.

The Court: Any objection?

Mr. Vartan: No, your Honor.

Mr. Nave: No objection.

The Court: In evidence.

(Document heretofore marked Respondent's Exhibit M for identification admitted into evidence.)

Q. (By Mr. Silvers): Did you call to Mr. Van Haraveld's attention on November 3, 1954, when you signed that document, that it contained no reference whatsoever to your second dive?

Mr. Nave: I object to that, if your Honor please, as argumentative.

The Court: Overruled.

A. Will you repeat that question, please?

(Testimony of Rudy Del Rio.)

Mr. Silvers: Would you read that back, please, Mr. Reporter?

(Question read by the reporter.)

A. Well, I don't know if I mentioned it or not, but—no, I don't believe I mentioned it.

Q. (By Mr. Silvers): Did you sign any other written report, Mr. Del Rio—

A. No, sir. [531]

Q. —of your diving efforts?

A. No, sir.

Mr. Silvers: That's all.

Mr. Nave: That is all.

The Court: Thank you.

(Witness excused.)

Mr. Nave: May this witness be excused, your Honor?

The Court: Yes, sir.

Mr. Nave: Mr. Johnson.

### LESTER JOHNSON

called as a witness by the respondents, being first duly sworn, thereupon testified as follows:

The Clerk: Please state your name to the Court.

A. Lester Charles Johnson.

### Direct Examination

By Mr. Nave:

Q. Mr. Johnson, how old are you?

A. 50 years old.



(Testimony of Lester Johnson.)

Q. And where do you live?

A. I live in Avila Beach, California.

Q. How long have you lived there?

A. I have lived there twenty-nine years.

Q. By whom are you employed?

A. What is that? [532]

Q. Who do you work?

A. Union Oil Company of California.

Q. For how long have you been employed by them?

A. Twenty-eight years and eight months.

Q. Are you still employed by the Union Oil Company?      A. Yes.

Q. And what is your present occupation or position?      A. Assistant foreman.

Q. I call your attention to an explosion and fire in September, 1954, at Avila involving the fishing boat Santa Lucia. Were you there at that time?

A. I was on the wharf, yes.

Q. And what was your position then? I mean, what was your job? What were you doing?

A. Assistant foreman.

Q. Where were you at the time of the explosion?

A. I was in the office building.

Q. I call your attention to Libelant's Exhibit 2 on the blackboard showing a wharf, the position of the Santa Lucia. The office you mention is at the end of the wharf as shown here on this sketch?

A. That is right.

Q. And was anyone in the office with you at the time the Santa Lucia came into the wharf?

(Testimony of Lester Johnson.)

A. No. [533]

Q. When did you first see the fishing boat Santa Lucia that day?

A. I first saw her when she was approaching from the sea toward what we call Berth 4 on the east side of the wharf.

Q. And the Tanker Lompoc was in the area shown on Libelant's Exhibit 2?

A. Yes.

Q. Now, when the Santa Lucia came in from the sea at that time, was there anyone else in the immediate area besides yourself?

A. Charles Caldwell. He was on the outside of the office toward the west side.

Q. What were you doing in the office at that time generally?

A. I was making notations in the log book of the operations. We had just shut down one commodity of oil and were starting to load another commodity.

Q. That's in respect to the Lompoc?

A. On the Lompoc, yes.

Q. Did you hear any conversation between Mr. Caldwell and anyone aboard the fishing boat Santa Lucia at that time?

A. The window was open and I heard someone call for gasoline, and Caldwell was pointing and told him, "down the wharf," toward the big "76" sign which we had there.

Q. Did you hear any particular conversation? Were you able to determine what was said in particular or just hear [534] somebody speak of gasoline?

(Testimony of Lester Johnson.)

A. That is all I heard. Just gasoline, whether "we want gasoline" or just "gasoline," I don't know.

Q. Did you see Mr. Caldwell leave the area of the office following that?

A. Mr. Caldwell came into the office and picked up his sales book and cash box and went out and went on down to the gas station.

Q. Did you remain in the office at that time?

A. I did.

Q. Did you make any observation at that time as to what was going on down in the area of the fishing boat Santa Lucia?

A. No.

Q. Did you hear any noise some time following that? Did you hear an explosion?

A. Well, approximately five minutes later after the boat approached the sign I heard an explosion or a big rumble, boom like. It was just like, well, I couldn't tell exactly where it came from or anything. It was just an explosion or a boom.

Q. All right. And were you in the office when you heard this explosion?

A. Yes.

Q. You don't know how long it was exactly after the fishing boat came into the dock that you heard this explosion, do you?

A. No. [535]

Q. Is there a window in the office where you were that faces toward the Marine Service Station?

A. The office is completely enclosed in glass. It is enclosed in glass all the way around. There is an open door on the west side and open windows on the west side and east side, which both windows were open and the door was open.

(Testimony of Lester Johnson.)

Q. All right. Now, this explosion you say you heard, was that a series of sounds or one boom or two booms, or what was it?

A. No, to me it was just one boom and it was quite strong.

Q. One boom, quite strong. Did you make any observation in the area following hearing this boom?

A. I immediately looked out to sea. We had some boats up here that were making soundings with black powder, a survey, and it was approximately the same kind of a boom but much larger. And then I looked toward the Lompoc to see if there was anything amiss there, and apparently there was nobody moving or hollering, so I knew that nothing happened there. I then went to the door, and outside the door where I could look toward the gas landing or gas station, and I saw the smoke coming up from where the Santa Lucia was.

Q. Did you observe any fire any place at that time?

A. At that time, no.

Q. What did you notice? What did you do next?

A. I returned to the office, and by that time the two men [536] that were in the back room just finishing their dinner came out and I instructed them to close everything down, that is, close off the hoses for the crude oil to the Lompoc.

Q. Then what did you do next?

A. Then I returned outside and started toward the smoke. By that time there was fire. And I met Mr. Caldwell about the after part of the chain



(Testimony of Lester Johnson.)

room. We have a remote control there to start our fire engine. I went over to turn the crank on that, at the same time that Caldwell was there, and he asked me if he was burned badly, and I told him he looked like it, and he went into the office and I stayed right there in that area until Caldwell came out. I don't know what he did.

Then we both of us started down the wharf toward the shore end. I met Mr. St. John at the time and told him—Eldon St. John—to come with us, and we went down the wharf through the smoke, and Caldwell continued on down the wharf, and I instructed St. John to turn a marker on, a fire marker that we have on the fire line, and to keep the tanks cool and that he would have help soon.

Then I went back to the smoke up to the main part of the wharf where the ship's crew were breaking out—well, had already broken out the fire hoses and was beginning to hook them up to the fire lines.

Q. All right. Now, Mr. Johnson, when you first saw any fire or flames in the area, can you tell how long after you [537] heard the explosion it was you first saw any fire or flames anywhere in the area?

A. Oh, I would say probably three or four minutes.

Q. And when you first saw fire or flames, where did you observe them?

A. Well, it was down in the area of the boat, of the Santa Lucia, on the outer part of the landing.

Q. Now, when you first met Mr. Caldwell, where was he when you first saw him after the explosion?



(Testimony of Lester Johnson.)

A. He was just aft of the chain room, somewhere in the area where the chain room was, something—somewhere in that area.

Q. And were you able to see what, if any, his injuries or what his appearance was at that time?

A. Well, his appearance then was that he had a—well, on his forehead he had a bloody spot like he had been hit with something, and then the rest of his face looked it was sort of—like it had been shot with a shotgun or something, just scattered. The blood wasn't running, but it was apparent. It was on his face.

Q. Then following what you have detailed to us, did you do anything in reference to fighting the fire?

A. After I returned I went up to the office again and was going to call—I think I made the call before that, though, before Caldwell came, called the plant and also called my foreman [538] at the time I returned to the office after seeing that. Then when Caldwell—what was that question, again, please?

Q. If you fought fire.

A. Afterwards, yes. After I returned, I returned to the office and looked around. I don't know exactly what I did, but then I returned back to the after part of the chain room where I met one of the mates of the ship and I told him, "I think you better get out of here," and he turned to his ship then and called to his men and they all left for the ship, and I went down and took over one of the fire-

(Testimony of Lester Johnson.)

hoses. There were three men there then and I was the fourth one.

Q. And by that time over what area could you observe any fire or flame?

A. At that time from where we were standing the fire seemed to be coming from the ship, from the Santa Lucia, and we were behind the building, and——

Q. What building do you mean?

A. The warehouse building.

Q. The Marine Service Station?

A. Yes, the Marine Service Station, right.

Q. All right. Go ahead and tell what you observed.

A. Then we directed our water from our fire-hose over the top of the warehouse and toward the outer side, the outer edge, all over that area.

Q. Could you see the gasoline tanks and the Diesel tanks [539] that were on the Marine Service Station when you were in that position?

A. Yes.

Q. Did they show any signs of being blown up or ruptured?

A. No.

Q. Then you continued to fight fire?

A. Yes. After, well, maybe twenty minutes or something like that I instructed one of the men to take the tug Avila away from the wharf and stand by and I took over his place on the hose.

Q. Were you doing any fire-fighting at that time in reference to the Santa Lucia or were you directing your attention to the dock?

(Testimony of Lester Johnson.)

A. To the dock?

Q. Yes.

A. We were just covering the whole area of the warehouse and over the top toward the Diesel tanks and the gasoline tanks, all that area that we could reach with the water.

Q. There was a fire in that area at that time?

A. Yes.

Q. Following the—well, first let me ask you, how long was it—or what time was it approximately when the fire was extinguished?

A. When the fire started?

Q. No, when it was extinguished; when you had the fire out. [540]

A. Oh, eight o'clock. Eight p.m.

Mr. Nave: (Showing document to Mr. Silvers.)

Mr. Silvers: I have no objection.

Q. (By Mr. Nave): Mr. Johnson, I show you a blueprint or sketch which I will ask you to examine. Will you state whether or not that is a true and correct representation of the Marine Service Station installations, of the pipelines and tanks, and the position of the fishing boat Avila at the time of this explosion and fire?

A. Yes, this looks like it.

Q. You are familiar with the location of the tanks that are marked there as "Gasoline" and "Diesel" and "GM Diesel"?

A. I am.

Q. And you are familiar with the location of the pipes which are shown there in reference to those tanks?

A. Yes.

(Testimony of Lester Johnson.)

Mr. Nave: We offer this simply for the purpose of illustration.

Mr. Silvers: Your Honor, we would object to certain portions of the diagram which Mr. Nave has not yet referred to, allegedly taking some individuals, including the decedent Frank Cardinale, at the time of the explosion, and a number of other unidentified individuals at the time of the explosion.

The Court: Let me see it. [541]

Mr. Nave: (Handing document to the Court.)

The Court: Yes, we have had no evidence as to this from any witness.

Mr. Nave: I am not offering that. I am only interested, your Honor, in illustrating the equipment, the pipes, and the position of the various inanimate objects.

The Court: Suppose I receive it for that purpose and that purpose only. We have had testimony as to the location of where the waterhose and the gasoline hose was located on this projection of the dock. This more graphically presents it.

Mr. Silvers: Very well.

The Court: I will receive it only for that purpose, for the purpose of showing the structural positions aboard the dock and the relative positions of the ship at the time of the explosion and following the explosion.

(Document referred to admitted into evidence as Respondent's Exhibit N.)

(Testimony of Lester Johnson.)

Mr. Nave: Your Honor, may we have a recess at this time?

The Court: Yes.

Mr. Silvers: Your Honor, I didn't have an opportunity immediately after you stated for what purpose this was to be introduced to enter my objection with reference to the location of the ships. We are not conceding or stipulating that the tugs Avila and the Santa Lucia—— [542]

The Court (Interposing): Oh, I understand. Your position is that the Avila was in the position as illustrated on this Libelant's Exhibit 2?

Mr. Silvers: That is correct.

The Court: The Union Oil maintains that it was more to the outer portion of the dock. That has been pointed out before, and I have in mind the various contentions. This represents the contention of the oil company as to where this tug was located on the dock.

Mr. Nave: Yes.

The Court: Do you want a recess?

Mr. Nave: Yes, your Honor.

The Court: All right, we will have a recess for ten minutes.

(Short recess.)

Q. (By Mr. Nave): Mr. Johnson, did you at any time make an examination of the service station installations shown here on this map, Respondent's Exhibit N, in reference to the diesel tanks, the gasoline tanks and the lines that run from them?



(Testimony of Lester Johnson.)

A. Inspect them?

Q. Yes.

A. Yes, the next morning after the fire.

Q. Now, first in reference to a tank marked "GM Diesel" shown on the service station dock, what is the approximate [543] capacity in gallons of that tank? A. 2,600.

Q. Now, the "76" gasoline tank that is shown in the sketch, what is the capacity of that tank?

A. That is the same, 2,600.

Q. The diesel oil tank shown in this sketch, what is its approximate capacity? A. 1,000 gallons.

Q. Now, did you observe and inspect the GM diesel tank itself? A. After the fire?

Q. Yes. A. Yes.

Q. And what did you find the condition to be as to whether there were any ruptures or holes in it?

A. There were no holes or ruptures. The only condition was the burned paint on the outside of the tank.

Q. Was there still fuel in the GM diesel tank, if you know? A. Yes, there was.

Q. Now, as to the "76" gasoline tank, did you make an inspection of that tank? A. Yes, sir.

Q. What did you find the condition of that tank to be?

A. That tank was in a little better condition than the GM diesel tank, but toward the south side the paint was blistered [544] and burned, too.

Q. Did you see any signs of holes or signs of an explosion in either of those tanks? A. No.

(Testimony of Lester Johnson.)

Q. Was there any gasoline still in the "76" gasoline tank?      A. Yes.

Q. Do you know the amount of gasoline that was in the tank?

A. Not exactly, but I think there was possibly a thousand gallons in it.

Q. Now, the remaining tank here, marked "Diesel Oil," did you make an observation and inspection of that tank following the fire?      A. Yes, sir.

Q. This inspection you made when?

A. That there inspection was made, well, oh, I should say, around between eleven and twelve o'clock next day.

Q. What did you observe as to the condition of the diesel oil tank at that time?

A. The diesel oil tank was resting on 12x12 blocks, and on the outer edge the 12x12 blocks had been burned, and it was on a slope.

Q. Did you see any signs of holes or ruptures in that tank?      A. No.

Q. Was there still oil in that tank?

A. Yes, there was oil in it. [545]

Q. Now, the pipeline—let me ask you first, the pipeline that runs from the GM diesel tank as per the sketch goes over to the edge of the dock, is that right?      A. That is right.

Q. Did you inspect those connections, the pipe, the fittings and the connections?      A. Yes.

Q. And what did you find to be the condition of the pipeline, the fittings and the connections?

(Testimony of Lester Johnson.)

A. Outside of being—looking like they had been hot, they were still intact, not leaking.

Q. Was there any leak anywhere on any of the pipes, fittings or connections or any of the tanks that are shown in this sketch?

A. No, there wasn't, no.

Q. Or any other pipes, fittings or tanks that were on the Marine Service Station Terminal, that you know of?

A. No, there were no leaks.

Q. What size pipe connection is there that runs to the GM diesel toward the dockside?

A. Well, immediately out at the GM diesel there is a three-inch pipe that has a three-way valve on it, and it goes down to a two-inch and over to the meter where it was reduced down to an inch and a half, and then from the outer side of the meter towards the hose it is an inch and a quarter to the hose.

Q. Was there a hose nozzle that is used in lowering and [546] raising the fueling nozzle from the GM diesel tank?

A. Yes.

Q. Is there a hose reel, you say?

A. Yes, there's a hose reel.

Q. Is that a separate hose reel from the one that is used in handling the gasoline, the "76" gasoline?

A. Yes, it was an independent hose. It was separate.

Q. Now, this GM diesel, what type of diesel is that? What is it used for?

A. It is used for a high compression diesel. It is about the same color and substance as the kerosene would be.

(Testimony of Lester Johnson.)

Q. Now, the "76" gasoline, is that the regular commercial white gas?

A. That's the regular commercial gas.

Q. What kind of fuel is in the other tanks, the remaining tanks of the diesel?

A. That's what we call a domestic diesel. It is a real dark diesel.

Q. And what is it used for?

A. It is used for most of the larger diesel engines. Not the—well, they are high compression, all right, but they burn a heavier fuel.

Q. Now, a connection that runs from the "76" tanks, as shown on this sketch, Exhibit 9 here, what is the size of that line?

A. That line that is coming from the tank is a three-inch [547] opening with a three-way valve, and then it is reduced to two inches and is two inches clear up to the meter connection.

Q. And is the size of the pipe of the GM diesel tank at the meter the same as on the "76" gasoline?

A. That's right.

Q. Now, the hose reels, are they both the same size as used on the GM diesel at the gasoline?

A. That is right.

Q. Now, the nozzles that are used there, do you know if they are the same or different sizes?

A. They were the same; same size nozzle.

Q. I hand you Respondent's Exhibit J, which is a spring type gasoline nozzle, and I will ask you, is that the type of gasoline nozzle and mechanism that was on the gasoline hose running from the "76"



(Testimony of Lester Johnson.)

tank to the edge of the dock?           A. Yes.

Q. I call your attention to the red hose attached thereto. Is this the type of hose that was used on the gasoline hose at the time of this explosion and fire?

A. It is.

Q. You will notice in this exhibit there are some wires. Are those the same type of wires in the gasoline hose that were in use at the time of the explosion?           A. It is.

Q. Do you know what the purpose of these wires are? [548]

A. The purpose of those wires is to reinforce the hose and also act as a grounding wire.

Q. Now, during the twenty odd years you have been employed at Avila, I will ask you if this is the standard type of gasoline hose that was used at the Marine Service Station.           A. It is.

Mr. Vartan: Just a moment before you answer that. Your Honor, as I understand the question, it is the standard type used at Union, but that doesn't make it one way or the other.

The Court: Well, common sense tells me, and tells you if you look at it, it is the standard type used in all service stations when we pull up to get gasoline.

Mr. Vartan: No, I was referring to the——

The Court (Interposing): All right, let him answer. Objection overruled. Have you been using a nozzle of this type for your gasoline hose ever since you have been there?           A. Yes, your Honor.

The Court: Now, there is another nozzle that is



(Testimony of Lester Johnson.)

used, is there not, where gasoline is delivered under pressure and stops flowing and the motor that pumps it stops operating when the gasoline tank is filled? Have you seen such an object?

A. I believe there are such nozzles that they have in service stations, that is, for cars, that if you put the nozzle into the tank, when the gasoline reaches a certain point it [549] automatically shuts off, but we have never used one of those in the time that we have been down there.

The Court: Have you ever seen those used on docks which make sale of gasoline to marine vehicles? A. No, your Honor.

The Court: All right. Proceed.

Q. (By Mr. Nave): Now, Mr. Johnson, I may have asked you this. I want to be sure I have covered it. You examined all the tanks? You also examined all the pipes, connections and fittings?

The Court: I think you went over that. He said all pipes, tanks—no leaks.

Mr. Nave: All right. I just wanted to be sure.

The Court: I think we went over that very carefully one by one.

Q. (By Mr. Nave): Now, Mr. Johnson, I call your attention to a photograph in evidence marked Respondent's Exhibit B, which purports to be a photograph taken from the water side facing the pilings of the Marine Service Station dock, and I call your attention to the piling on the far end of the picture, the last one over there, which you will see is bent in instead of being straight up and down. I will

(Testimony of Lester Johnson.)

ask you if you had observed that piling following the explosion and fire.      A. Yes, I did.

Q. And that piling which is shown in this photograph in [550] this condition as being bent in, was that piling in that position prior to this explosion?

A. No.

Q. Now, the pilings that are shown here in the photograph, did you examine those pilings following the explosion and fire?      A. Yes.

Q. Did you also observe the under side of the deck or dock?      A. Yes.

Q. And what did you see? What was your observation as to any signs of explosion or burning there?

A. It showed where it had been charred. It burnt completely through the deck, the part there, and all the decking showed burned partly. Taking it from this photograph, it don't show as much of the burning, because it is from the warehouse side and also the stern part of the Santa Lucia, which was facing this way.

From this corner of the piling, but this way, coming from that on this side, you can see where it is all charred.

Q. Now, the tug Avila as shown on this sketch, Respondent's Exhibit N, is that the Avila ship which belonged to the Union Oil Company?

A. It is.

Q. And on Libelant's Exhibit B—Libelant's Exhibit B, you will notice the position as shown here of the Avila.      A. Yes. [551]

(Testimony of Lester Johnson.)

Q. Do you know where the Avila was actually moored at the time of the fire?

A. Yes, the Avila was moored about opposite the offshore. It would be about opposite the offset on the wharf.

Q. Are you familiar with the fact that there is a ladder that goes down from the offset in the area where the Avila is anchored or moored?

A. I am.

Q. And as shown on Libelant's Exhibit 2, the circle here marked "Ladder GR," is that the approximate location?      A. Yes.

Q. And where was the Avila with reference to this circle?

A. The Avila would be about midships of the—midships on the Avila would be where the ladder comes up.

Mr. Nave: Thank you. You may examine.

#### Cross-Examination

By Mr. Silvers:

Q. Mr. Johnson, you are familiar and were at the time of this explosion with the instructions that the Union Oil Company gave its employees at this installation concerning fueling of vessels like the Santa Lucia, isn't that right?

A. That is right.

Q. And part of the instructions of the Union Oil Company in that regard was that a fishing boat of the Santa Lucia type was to have delivered to it the

(Testimony of Lester Johnson.)

amount of gas that the boat [552] asked for, isn't that right?

A. If they asked for a certain amount of gasoline, and I mean if they asked for so many dollars worth, you would look on your chart and give them so many dollars worth, how many gallons that would be that they asked for. If they asked for the exact amount of gasoline or diesel, or whatever it was, you would give it to them.

The Court: You mean a fisherman coming up and buying a certain amount of gasoline for fuel?

A. That's right.

The Court: Some of them don't want to put any more money in?

A. Some of them don't have the money, and some of them don't take it.

The Court: So it is your custom, then, and the men aboard the ship were accustomed that if they wanted thirty gallons, you gave them thirty gallons and no more?

A. That's right.

Mr. Vartan: May I have the page number, Mr. Reporter?

The Reporter: Page 16.

Q. (By Mr. Silvers): Now, there was a warehouse on the gas dock which was essentially destroyed in the fire and explosion, and shown here on the exhibit, Libelant's Exhibit No. 2. [553]

A. The warehouse, yes.

Q. And what did that warehouse have in it——

A. That warehouse——

Q. ——at the time of this fire and explosion?



(Testimony of Lester Johnson.)

A. It had lube stock, lube oil, barrels of lube oil, one barrel of kerosene——

Q. It had a barrel of kerosene?

A. One barrel of kerosene.

Q. Where was the barrel of kerosene located?

A. I couldn't tell exactly, but it was on the inside of the warehouse.

Q. In addition to the barrels of lube oil and the barrel of kerosene, what else was in the warehouse?

A. There was one barrel of what we call appliance fuel. That is a fuel that is for gasoline lanterns or gasoline stoves where they want a white gasoline with no color in it.

Q. Now, you have told us what remained of the contents of the big tanks of diesel and "76" gas and GM diesel outside the warehouse that I have just referred to. Now, what, if anything, was the condition of the stocks of fuel that you have just described in the interior of the warehouse after this explosion and fire?

A. They was, I would say, about three barrels probably had broken open from the heat, and they was some of the lube stock left. There was others that had broken open and fallen through [554] the floor that was absolutely destroyed.

Q. Was there any kerosene or appliance fuel left?

A. No.

Q. Does this photograph which I am showing you now correctly show the Santa Lucia, what remains of her after the fire and explosion, and the



(Testimony of Lester Johnson.)

tug Avila that was involved in the firefighting episode?      A. Yes.

Q. You actually saw that scene yourself, did you?      A. No, I did not see it.

Mr. Silvers: We will offer this in evidence, your Honor.

The Court: What is this supposed to be? The scene at the time of the fire?

Mr. Silvers: Immediately. The ship is still burning.

The Court: Any objections?

Mr. Nave: No objection.

The Court: It may be received in evidence.

(Photograph referred to admitted into evidence as Respondent's Exhibit O.)

Q. (By Mr. Silvers): Is that man on the Avila with a cigarette in his mouth a Union Oil employee?

A. I would have to look at that to see who it is.

Q. Do you know approximately how long after the fire and [555] explosion that photograph was taken?

A. No, I don't, because as soon as I was relieved on the hose when the fire was practically out, as soon as I had relief on the hose I went back to examine the cargo hoses from where the Lompoc had pulled out, to see if they was—to see if the lines were holding, if there was any oil on the water, and then after I made my inspections I came back to the fire, but by that time we had relief and the fire was practically under control. I was around in that area

(Testimony of Lester Johnson.)

and then I went back to the office where I changed clothes. So at the time this photograph was taken I wasn't there.

Q. Very well.

A. (Continuing): The man that is on the top side of the boat here is a Union Oil employee, yes.

The Court: Who produces this picture?

Mr. Silvers: I think we obtained it from the Union Oil Company.

Mr. Nave: These are photographs that were taken by a commercial photographer in the area after the fire and explosion and we supplied these to counsel.

The Court: This last photo was supplied by the Union Oil Company, then?

Mr. Silvers: Yes. They were not taken by us; they were taken by a commercial photographer.

Mr. Vartan: Wasn't that a local newspaperman who [556] was on the job?

Mr. Nave: I think that's right. We supplied counsel in the other case with copies and they had these enlarged.

Q. (By Mr. Silvers): Were all the items that were salvageable and recoverable that were found on this gas dock after the fire, to the best of your knowledge, collected for that purpose by the Union Oil Company?

A. Yes. What was salvaged?

Q. Yes.

A. Well, yes, they was salvaged.

Q. You made whatever use you could of what-

(Testimony of Lester Johnson.)

ever equipment and fuel oil remained, isn't that correct?     A. Yes.

Q. I am going to show you next, Mr. Johnson, Respondent's Exhibit D in evidence, and I call your attention to the objects shown in the top center of that photograph. Is that the reel on which the gasoline hose that was used to fuel the Santa Lucia was rolled just before this fire and explosion?

A. Yes.

Q. Is part of the gas hose that was used to fuel the Santa Lucia at the time of this fire and explosion still shown in that photograph attached to the reel?

A. Yes, there is the coupling part that the hose is fastened to is shown here on the reel. That is your brass fitting that [557] screws in.

Q. Is there anything except that brass fitting or coupling that is shown on the photograph as still being attached to the reel?

A. I don't see it in this photograph.

Q. There is no portion of the hose itself?

A. No, there is no hose.

Q. Do you know where the couplings or fittings that you have just referred to are at the present time?     A. No, I don't.

Q. Do you know what happened to that after the fire and explosion?

A. Well, several days or a week, probably, after that when we began to break down the pipeline, there is a sort of a stockpile up to the Avila pump station there.

Q. Do you know what happened to it after it was

(Testimony of Lester Johnson.)

taken to the stockpile?           A. No, I don't.

Mr. Silvers: I have no further questions.

The Court: Do you want something, counsel? I see you standing there.

Mr. Vartan: No, your Honor.

The Court: If it's a matter of personal convenience, stand up. You have no questions to ask this witness, do you?

Mr. Vartan: No. [558]

Mr. Nave: No further questions.

The Court: Thank you very much.

(Witness excused.)

The Court: Next witness.

Mr. Nave: Mr. McMillan.

### JAMES BOYCE McMILLAN

called as a witness by the respondents, being first duly sworn, testified as follows:

The Clerk: Please state your name to the Court.

A. James Boyce McMillan.

### Direct Examination

By Mr. Nave:

Q. Mr. McMillan, how old are you, sir?

A. 54 years.

Q. And where do you reside now?

A. Lomita, California.

Q. Are you employed by the Union Oil Company?  
A. Yes, sir.

Q. What is your present occupation?

(Testimony of James Boyce McMillan.)

A. Terminal supervisor.

Q. How long have you worked for the Union Oil Company?

A. Oh, about thirty years and six months, eight months.

Q. Now, at the time of the certain explosion and fire in September, 1954, in Avila, were you employed at Avila by the Union Oil Company? [559]

A. Yes, sir.

Q. And what was your then position?

A. Terminal supervisor.

Q. The term "terminal supervisor," Mr. McMillan, means that you were in charge of the Avila installation, is that right? A. Yes, sir.

Q. And how long had you been at Avila in that capacity before this explosion? A. June, 1942.

Q. Now, Mr. McMillan, do you recall the day there was an explosion and fire involving the fishing boat Santa Lucia in September, 1954? Do you recall that day? A. Yes.

Q. And did you hear any explosion or anything unusual that directed your attention to the fact that something had happened? A. Yes, sir.

Q. And where were you when something happened that directed your attention to that?

A. Sitting at the table in my kitchen, I think.

Q. How far away from the immediate area of the Santa Lucia at the fishing dock were you at the time you heard something?

A. About a mile, three-quarters of a mile.

Q. And what did you hear?



(Testimony of James Boyce McMillan.)

A. I heard just an explosion and booming.

Q. How many booms did you hear? [560]

A. Just one.

Q. And did you at that time or following that make any observation from any place?

A. Yes, sir. I ran to the front door which overlooked the harbor.

Q. And what did you see?

A. I saw a big cloud of smoke down there at the gasoline landing, and some low fire, but how much—it wasn't very much.

Q. All right. What did you do then?

A. I ran straight to my car, got in my car and drove to the head of our dock.

Q. All right. Just tell me what you did next.

A. Got the extra water equipment and lined up the crews, went to the head of the dock for extra fire equipment, saw that the master valves were all closed at the end of the dock. I talked to the sheriff and had him keep the traffic away. Before I left I talked to a highway patrolman and asked him to guard the private highway to keep people out.

Q. Did you go to the scene of the explosion and fire following that?

A. Yes, sir.

Q. And how did you go, walk or take a boat?

A. I ran to the approach.

Q. You mean by that you went out on the wharf itself?

A. On the narrow part of the dock called the approach. [561]

(Testimony of James Boyce McMillan.)

Q. Can you tell me, sir, approximately how long this wharf is from one end to the other?

A. Well, the approach is about twenty-seven hundred and some feet. The square is approximately 120 by 200.

Q. Now, you stated that—first, let me ask you, your home is in Avila?

The Court (Interposing): The approach is how long, did you say?

A. It is 2,700 and some feet, your Honor. Could be 2,600 and some feet.

The Court: That is the pier that projects out from the dock and that is out in the deep water?

A. Shallow water, your Honor. You have to go out far to get deep water.

The Court: You have a pier built out to the deep water dock? A. Yes.

Q. (By Mr. Nave): Is your home in Avila on a high place or down low?

A. Yes, sir, it's up high. It is on a hill overlooking the ocean.

Q. And can you see from your home the wharf installation or the Marine Service Station area?

A. Yes, sir, very clearly.

Q. Now, you stated that you first heard an explosion and [562] you went outside your home, is that right? A. Yes.

Q. And you saw a low fire?

A. Yes, sir, smoke and some low fire.

Q. Could you determine from that distance where the low fire was coming from?

(Testimony of James Boyce McMillan.)

A. No. It would have to be in the water, because my home is northeast and I was looking right down to our dock.

Q. Could you see what the color of the smoke was, what type of smoke you were seeing?

A. It was dark and light.

Q. Then when did you next make an observation in reference to seeing fire in the area after this first time you mentioned?

A. Well, going through town I got to the trestle and the dock was in good clear view again and I glanced over at that time.

Q. What did you see then?

A. I could see more fire and less smoke.

Q. Could you determine then where the fire was?

A. It was on the north side of the dock, the face of our dock.

Q. All right. Then did you from time to time after that make observations in the area of the fishing boat and dock?

A. At the time when I was at the head of the dock or the gate getting extra water and fire equipment, then I could look [563] out and see smoke and fire. I heard the ship bells, the general alarm.

Q. What ship?                      A. The Lompoc.

Q. Then did you, when you finally got to the immediate area where the service station dock is located, what did you observe then in reference to what was going on?

A. There was three or four men—it was a good hot fire by that time both on the water and the dock.

(Testimony of James Boyce McMillan.)

and there were several streams of water on the north side, and I could see over the smoke where they were pouring water on the south side.

Q. Now, did you remain at the scene of this explosion and fire for some time?

A. No, sir. Yes, at the scene of the fire I did, but not the dock.

Q. Did you get in a boat?

A. Yes, sir. The closest I got to the fire was approximately a hundred, 150 feet, and I observed a tug that saw me coming down and I climbed into the boat on a rope.

Q. Referring to the tug Avila, is that right?

A. Yes, sir.

Q. Now, were you in Avila at the time this particular Marine Service Station installation was installed?

A. Yes, sir.

Q. Are you familiar with the physical plant there in [564] reference to the location and size of the diesel gasoline tank and the various connections that service it?

A. Yes, sir.

Q. The size of the two tanks as shown on this sketch, Respondent's Exhibit N, GM diesel and "76" gasoline, what were the sizes of the tanks?

A. They were 2,600 gallons. They were small, tall steel tanks.

Q. And what was the size of the diesel oil tank?

A. Approximately a thousand gallons.

Q. Following this fire did you make an examination or inspection of the Marine Service Station installation there?

A. Yes, sir.



(Testimony of James Boyce McMillan.)

Q. And when was that inspection made?

A. Before we left the fire scene we looked over, or I did, to see there was no leakage or chance of a flare-up, and then before we brought the two big ships in—we had the Lompoc and Santa Paula coming by that time—I made a good, thorough inspection to see that there was no leakage before I brought those two tankers in.

Q. I understand the Lompoc was at sea, and you had other tankers coming in?

A. The Lompoc was at anchor and the Santa Paula came in and anchored in the Bay during the fire.

Q. How long after the explosion and fire was it that you [565] made an examination of the service station area?

A. Before we left the scene we actually looked all over good to see there was no leakage, but it was somewhere after midnight, possibly 11:30, I made an inspection before bringing the tankers in.

Q. All right. Now, what did you observe or see in connection with the three tanks as to evidence of any leakage or any rupture or any holes at all?

A. No, sir, there was no leakage at all, because we wouldn't have brought the ships in.

Q. Did you examine the pipelines, fittings and connections and valves that run from the various tanks to the edge of the dock?

A. I examined the valves on the tanks, and the other lines of the tanks at that time were shut off.

Q. Did you observe or see any leakage or spilling



(Testimony of James Boyce McMillan.)

from any of the valves, pipes or connections from the general GM diesel tank?      A. No, sir.

Q. With reference to the "76" gasoline tank?

A. No.

Q. With reference to the diesel oil tank?

A. No, sir.

Q. Did you examine the warehouse as shown on the Marine Service Station? [566]

A. No, sir, you couldn't examine it too well. It was a wooden frame building. But I am sure there was no fire in it at the time.

Mr. Silvers: I am sorry. I can't hear the witness.

Mr. Nave: He was sure there wasn't any fire, he said, in the warehouse at that time.

Q. (By Mr. Nave): Was there any of the GM diesel or "76" gasoline or diesel oil salvaged in the tanks following the fire, to your knowledge?

A. Yes, sir, there was in our gasoline tank 700 feet something of salvage and put back in the sales department stock approximately two or three weeks later. And the diesel, there was salvage from the tanks. There was some evaporation, but all that was in the tank was salvaged and put back in stock. That's the GM diesel. The domestic diesel was salvaged. At the present time I can't figure what stock it went into. Possibly back up to the station.

The Court: Would it be convenient to take a recess now at this time?

Mr. Nave: Yes.

The Court: How long do you gentlemen want to recess to? Until two o'clock?

(Testimony of James Boyce McMillan.)

Mr. Vartan: Your Honor, in view of what has been expressed about the time limitations—I understand from Mr. Nave he has four days—I think that we had better start [567] working if we are going to finish.

The Court: Well, I am willing to work. If he has four days, we had better sit a little later tonight.

Mr. Vartan: I think it should be explored.

The Court: How many more witnesses do you have today?

Mr. Nave: I don't know, your Honor.

The Court: Gentlemen, tomorrow we will begin at nine o'clock in the morning and I expect to continue until five.

(Further colloquy off the record.)

(Thereupon, this cause was recessed to the hour of 2:00 o'clock p.m.) [568]

September 9, 1957—2:00 P.M.

JAMES BOYCE McMILLAN

recalled as a witness on behalf of the respondents, resumed the stand, having been previously duly sworn, testified as follows:

Direct Examination  
(Resumed)

By Mr. Nave:

Q. Mr. McMillan, following this explosion and fire, certain material was removed from the service station dock at a later time?

(Testimony of James Boyce McMillan.)

A. Yes, sir, it was all removed to rebuild the platform there.

Q. And there was some metal that was in the residue of the fire removed from there?

A. Yes, sir.

Q. Was the meter one of the articles?

A. Yes, sir.

Q. And what was the condition of the meter following the fire?

A. The frame of the meter was in good shape, but the top part was burned out.

Q. And do you know what happened to the scrap or the metal that was removed from the dock following the fire?

A. Anything that was removed from the dock was put in a—they had a general junkpile, and after a certain length of time, [569] why, some vendor comes around and bids on it, and they just take the 20 or 30 tons of junk, whatever there is.

Q. They disposed of the meter, you mean?

A. Yes.

The Court: How big was this meter?

A. The meters are——

The Court: This meter.

A. This meter was about 22 inches, 24 inches long, about so wide, 18 inches wide possibly.

The Court: 24 inches by 18 inches?

A. Yes, something like that.

The Court: And what was shown on the meter?

A. We had several types of meters. The type we used at that time, your Honor, was like a speed-

(Testimony of James Boyce McMillan.)

ométer type that had small figures for your total amount and a clock that you can set the amount of delivery.

The Court: Just what do you mean by that, that you had a clock which you could set?

A. You could zero your sale after your sale.

The Court: You mean bring it back to zero?

A. Yes.

The Court: And did it have any apparatus that would shut off delivery when you reached a certain quantity?

A. No, sir.

The Court: It had no shutoff? [570]

A. No.

The Court: There was no mechanism in this meter that, for instance, if you set the delivery at ten gallons, the valve would shut and delivery would stop at ten gallons?

A. No, sir.

The Court: How big were these numbers on delivery, that would show the quantity of gasoline delivered?

A. It would be hard to quote, your Honor.

The Court: Well, about.

A. Possibly a little over a quarter of an inch.

The Court: The numbers were a quarter of an inch?

A. About that.

The Court: That would show the total gallons delivered?

A. Yes, sir.

The Court: A quarter of an inch high?

A. Yes, or higher.

(Testimony of James Boyce McMillan.)

The Court: And how would these numbers be shown on this indicator? Were they white numbers on a background or black numbers on a white background or were they just metal numbers without any paint?

A. No, sir, there were several meters that had black numbers.

The Court: No, I am talking about this particular meter, on the gasoline meter that was on that dock the day of [571] this explosion.

A. I couldn't give you which was which.

The Court: Do you remember whether it had any color or whether it was just a metal without a color?

A. No, it had colors.

The Court: It did have colors. You don't remember?

A. No, I don't remember.

The Court: Now, were these numbers on this meter exposed on both sides of the meter or only on one side?

A. One side .

The Court: And where was that side, to the dock, to shore or to the water?

A. It was facing the water, but you could see it from the office; by looking out the office window you could see it.

The Court: Now, facing the water, the numbers were facing the water?

A. They were facing the water, yes, sir.

The Court: Were they facing the side at which this ship had been docked?



(Testimony of James Boyce McMillan.)

A. Yes, sir.

The Court: And how high above the dock was this meter, how high, how high above the floor of the dock were the numbers on this meter?

A. Two feet or a little less; two feet to twenty-six inches.

The Court: And how near the edge of the dock was [572] this meter? How far was it set back from the edge of the dock?

A. Approximately five feet.

The Court: Five feet?

A. Approximately, sir.

The Court: So, then, one aboard the ship, with the deck of the ship nine feet below the floor of the deck, could not see these numbers unless he climbed up on something?

A. No, sir.

The Court: All right, sir.

Mr. Nave: Thank you.

Q. (By Mr. Nave): Mr. McMillan, did you notice the prevailing wind, the direction of the wind which was blowing at or about the time of this explosion and fire?

A. No, sir. We had an easterly wind all afternoon, and then it was twenty minutes after the fire after I left the dock, at four o'clock, after that, but when I returned to the fire we still had a southeasterly wind.

Q. Had what, sir?

The Court: "Still had a southeasterly wind."

A. Yes.

(Testimony of James Boyce McMillan.)

Q. (By Mr. Nave): South?

A. Southeasterly, light, wind.

Q. Did you estimate the rate of speed, the number of miles per hour it was blowing?

A. Well, it was three to five miles. [573]

Q. There is an arrow indicated on Respondent's Exhibit B. Is that generally the direction the wind was blowing?

A. Yes, that's southeast.

Q. Is that about right?

A. Yes.

Q. That's the direction?

A. Yes.

Q. Now, on the service station dock, the Marine Service Station Terminal, what type of electrical equipment, lights and conduits, were installed there?

A. We had explosion-proof electrical fittings.

Q. You say explosion-proof. What do you mean by that? Describe it.

A. The dock was new and it was all—it had all new fittings. They were heavy fittings and the conduits were packed with a powder of some kind, explosion-proof fittings or heavy electrical fittings.

Q. Now, Mr. McMillan, you were the superintendent in charge of this Marine Service Terminal at the time of this explosion, were you not?

A. Yes, sir.

Q. And you had been there in charge of that terminal for, I believe you stated, around fifteen years before this explosion?

A. Yes, sir. Not at that time. That was four years ago, and I would say eleven years, over eleven years at the time of [574] the explosion.

Q. And during that period of time you yourself

(Testimony of James Boyce McMillan.)

serviced or assisted in any fueling of or the handling of gasoline and diesel for any ships and vessels that came into the Marine Service Station?

A. I helped the boys, yes, sir.

Q. And were you acquainted with the custom and practice as to the dispensing of gasoline from the Service Station Terminal?

A. Our custom had always been there: If a man would come in and say so much money he wanted to be shut off, or if he gave a specific amount to be shut off, our boys would shut him off. Otherwise, why, the man at the nozzle had control of it and they left it to him. That had been our custom for years.

Q. And were those the instructions that Mr. Caldwell had?           A. Yes, sir.

Q. In handling the gasoline at the Marine Service Station?           A. Yes, sir.

Mr. Nave: You may cross-examine.

### Cross-Examination

By Mr. Silvers:

Q. You say both the custom and the instructions of the Union Oil Company to its employees were in the event someone asked for a definite amount of gasoline at the gas dock, to see that he got that amount and shut him off, is that right?

A. A specific amount, yes, sir. [575]

Q. A specific amount?           A. Yes, sir.

Q. Say thirty gallons, right?

A. If he said specifically he wanted thirty gallons, we shut him off at thirty gallons.

(Testimony of James Boyce McMillan.)

Q. Was that both the custom and practice, as well as the express instructions of the company, to the employees at the dock? Is that correct, sir?

A. Yes, sir.

Q. Pardon me? A. Yes, sir.

Q. Hadn't you had trouble with that meter before at the gas dock that you knew about, Mr. McMillan? A. Yes, sir.

Q. None at all? A. Not the meter, no.

Q. Were you in court when Charles Caldwell testified concerning the trouble they had with the meter?

A. We had trouble with this meter. It would stop registering. That was the only thing that happened to it. That happens with meters if it gets a piece of scale or something gets in there, and it stops them, but that's the only trouble we ever had with the meter, with that particular meter.

Q. That's the only type of trouble that you knew about?

A. That's the only type of trouble we had with any of the [576] meters.

Q. You told us that the top part of the meter was burned. It was actually fused together, wasn't it, the metal? A. Yes, sir, after the fire.

Q. And was the metal coupling to which the gas hose was joined, where it began was that also in this group of metal that was sold for junk after the fire and explosion?

A. We discontinued the service station. All that stuff went for junk.

(Testimony of James Boyce McMillan.)

Q. I am referring to the same item that I pointed out to Mr. Johnson. I am showing you again the photograph, Respondent's D, the coupling to which the gas hose joined. Was that also part of the metal that was sold with the meter?

A. Possibly thrown away or sold because it was of no further use.

Q. You said, sir, you had conducted a test after the fire and explosion of the various pipes and fittings that remained?

A. Yes, sir.

Q. Isn't that correct?

A. Yes, sir.

Q. You found everything tight and orderly, there were no ruptures or lesions, is that right?

A. Yes.

Q. Mr. McMillan, did you ever make or did anyone to your knowledge at Union Oil ever make a test of that portion of the [577] pipe that led from the meter to the gas hose on the reel?

A. No, sir, it was all steel. It was all together.

Q. I beg your pardon?

A. It was all steel fittings and they were all together.

Q. Well, you mentioned that they had been tested. How did you test the other sections of the pipe and fittings that you were referring to?

A. The following morning we saw that the gate was closed back at the meter and—the steel gate—and we opened the tank onto the pipelines and watched for leaks.

Q. You let fuel run through the pipelines, is that right?

A. Yes, sir.



(Testimony of James Boyce McMillan.)

Q. And you saw there were no leaks?

A. We didn't run it through; we filled the pipelines with fuel from the tanks.

Q. You filled them with fuel from the tanks?

A. Yes, sir.

Q. You observed no leaks, but you filled them with fuel from the tanks just up to the point of the meter, didn't you?      A. Yes, sir.

Q. You didn't make any test at all from the meter to the end of the—to the gas hose reel, did you?      A. No, sir.

Q. So you have no means of knowing what the condition of that section of the pipe was, isn't that right, sir? [578]

A. The pipe was in good—the pipe was in good shape.

Q. The pipe was in good shape. You mean just to a visual inspection, is that right, Mr. McMillan?

A. Yes, sir.

Q. The stock of white gasoline and appliance fuel that were in the warehouse were completely consumed in this fire and explosion, were they not?

A. I couldn't say whether they were completely or not, but they were mostly consumed, yes, sir.

Q. They were stored in the warehouse shack on the side of which the portable fire extinguisher is placed, isn't that correct?

A. Yes, sir. Would you repeat that question again? I didn't get it.

Q. The stocks of white gas and appliance fuel were stored in the warehouse shack on the gas dock,

(Testimony of James Boyce McMillan.)

on the side of which shack the portable fire extinguisher was placed, isn't that correct?

A. We didn't have a shack; we had a warehouse, sir.

Q. Well, you will pardon my terminology. I am referring to the structure, whatever it was called.

A. Yes, sir.

Q. It is noted as a warehouse on your diagram, and in which was stored the white gas and appliance fuels. You know what I am referring to? [579]

A. Yes, sir. There was a fire extinguisher on the side of that, yes, sir.

Q. By the way, was that fire extinguisher recovered?

A. No, sir, it dropped into the water or it wasn't——

Q. It wasn't anywhere on the dock?

A. No, sir. The planking was burned out, right at the meter, or that part of it.

Mr. Silvers: I have no further questions.

Mr. Vartan: I have no questions.

The Court: All right, sir. Thank you.

(Witness excused.)

**JAMES EWING HILL**

called as a witness on behalf of the respondents, being first duly sworn, thereupon testified as follows:

The Clerk: Please state your name to the Court, sir.

A. James Ewing Hill.

**Direct Examination**

By Mr. Nave:

Q. Mr. Hill, how old are you, sir? A. 60.

Q. And you are an employee of the Union Oil Company? A. Yes, sir.

Q. And what is your designation or your title for your job?

A. Supervisor of Fire and Protection for the Union Oil [580] Company; my function is chief fire protection engineer, chief safety engineer.

Q. And how long have you been a supervisor of fire safety? A. Since approximately 1940.

Q. How long have you worked for the Union Oil Company? A. Thirty-six years.

Q. What is your educational background, Mr. Hill?

A. Graduated in chemistry, Cal Tech, Pasadena.

Q. Do you belong to any professional societies in the field of chemical engineering?

A. Not in chemical engineering.

Q. What is your field in that respect?

A. Well, my present field is fire protection and safety engineering.

Q. Do you belong to any professional societies in

(Testimony of James Ewing Hill.)

reference to that?           A. Yes, sir.

Q. What?

A. Charter member of the Society of Fire Protection Engineers, also charter member of the American Society of Safety Engineers and American Petroleum Institute, and chairman of the Fire Protection Engineering Committee, past chairman of the Central Committee of Fire Protection, and presently a member, and past chairman of the Western Gas Fire Committee and presently a member, member of the Inflammable Liquid Committee of the [581] National Fire Protection Association, and also the NFPA Committee on Piers and Wharves.

Q. In connection with your work and your experience, Mr. Hill, is it your job to investigate fires and explosions?

A. Major fires and explosions.

Q. Major fires and explosions. And is that experience confined to explosions or major fires that appertain to the Union Oil Company or is that in the industry?

A. I have investigated many fires other than those that occurred for the Union Oil Company.

Q. Did you investigate the explosion and fire that occurred at Avila, California, in September, 1954?

A. Yes, sir.

Q. And when did you arrive at the scene of the explosion and fire?

A. As I recall, about nine o'clock the following morning.

Q. And did you go to the Marine Service Station

(Testimony of James Ewing Hill.)

installation and make an inspection of the equipment that was then on the service station dock?

A. Yes, sir.

Q. Will you tell the Court just what your inspection consisted of? What did you do?

A. Typical engineering inspection. I was interested in the operating facilities, that is, the tanks, the piping, warehouse, and the condition of the wharf itself. [582]

Q. Did you make an inspection of the three tanks and their fittings, that are detailed on Respondent's Exhibit N?

A. Yes, sir.

Q. Will you tell the Court just what you of your own knowledge determined as to condition of each and every bit of equipment involved in the gasoline and diesel tanks and their connections.

A. Well, considering the "76" gasoline tanks and connected piping first, the tank still contained approximately 1100 gallons of product. There was no evidence of any leakage in the shell or the bottom of the tank. The paint was considerably scorched, particularly on the east and south fronts. The tank did not suffer sufficient fire exposure to consider condemning it, and there was no evidence whatsoever of any rupture or release of product from the tank.

Next considering——

Q. Go ahead.

A. Next considering the piping from the tank, the installation was put in in 1951. It is typical of our installations of that period. All of the piping and



(Testimony of James Ewing Hill.)

fittings, such as valves, tees, elbows and so forth, were steel, and the fire exposure over approximately an hour and a half time in the area in which it was most severe was typical as to what could be expected.

The static pressure on that pipeline under normal use [583] is roughly eight to ten feet of oil, which is equivalent to say, two or three pounds PSI, which is very, very low pressure for 150-pound steel equipment. And there was no evidence of distortion or thread leaks or any loss of product up to the first plug cock that was due west of the strainer which in turn was due west of the meter.

I also looked at the piping on the downstreet side of the meter, and although it had taken more severe punishment than the other, from the standpoint of just general appearance, there was no evidence of any leakage at that point.

The meter—the upper portion of the meter, which was constructed of a lower melting point alloy than ordinary steel, had been fused and that appeared to be the point at which considerable gasoline had been released after the fire was under way.

The hose had been burnt off at the coupling. There was long fire exposure at that point. And the coupling was still in place at the reel.

As I said, throughout that entire piping system the maximum pressure that is obtainable is the static head of the liquid which is under 3 PSI (pounds per square inch).

Q. Is how much static head?

A. Not over three pounds at the most.

(Testimony of James Ewing Hill.)

Q. Now, with reference to the tank and the connections marked "GM Diesel," Mr. Hill, will you tell the Court what [584] inspection you made of that tank and the appurtenances, pipeline connections, as the result of your investigation?

A. There was still diesel in the GM tank; that tank had suffered more punishment than the gasoline tank as more paint was burnt off the surface, further around the periphery of the tank. The piping from that tank is also 150 pounds steel piping, and I didn't see any evidence of any leakage at that point.

Q. Did the GM tank, Mr. Hill, show any evidence of fracture or disruption or breaking?

A. None whatever. There was no evidence of any leakage of product from that tank.

Q. Now, the remaining tank is marked on the same exhibit and both exhibits are on the board, particularly we refer to Respondent's Exhibit N marked "Diesel Oil." Did you make an examination of that tank and its pipe connections, fittings, couplings, valves?

A. I did.

Q. Will you state what you found to be the condition of the tank and all of its appurtenances?

A. That tank had taken more fire exposure than the others. There was a fitting on the east side of the tank that appeared to have been hit by a missile, a small fitting, about a quarter-inch connection. That was broken mechanically. It was evident that the oil in that tank, after having suffered approximately an hour or more fire exposure from the heavy

(Testimony of James Ewing Hill.)

timbers burning underneath it, that the diesel was brought up to its boiling point and apparently had sprayed out product from the relief valve and also released product from the small line on the east side of the tank.

The piping from that tank also showed no evidence of any rupture or any leakage.

Q. Did the tank itself show any evidence of ruptures, holes, leakage or exposure?

A. The shell and the head and the fittings on the tank looked satisfactory.

Q. You mentioned that something—I didn't quite catch, Mr. Hill—showed evidence of something like being hit by a missile. What are you referring to in that respect?

A. There was a small fitting — I don't recall what it was—it was on the east head of the tank—which was broken and appeared to have been struck by some heavy missile such as a timber.

Q. Did you in that same area, Mr. Hill, that you have covered in this inspection, did you make any inspection of the timber, the planking and the pilings of the wharf structure itself at the time of your inspection?

A. Yes, sir.

Q. And will you state to the Court what your inspection revealed in that respect? [586]

A. Well, consider the decking first, it was evident that in the area where the meter was located and where gasoline had been released from the "76" tank that the severity of burning was the greatest.

(Testimony of James Ewing Hill.)

With the open planking we had there on the dock, cracks between the planks, it permitted the air to come up through the planks at the time it was burning on top and naturally the deck acted the same as a grate and would exhibit pretty heavy burning. The fire spread over into the warehouse area and also had burned the planking in the warehouse. The corrugated iron, of course, was partially down, and as the fire spread into the warehouse the drums of the warehouse exhibited typical fire exposure damage that I have seen in other locations. The charring on the piling was what might be expected from the diesel oil burning on the water below it. It was quite evident to me that when the diesel tanks from the vessel went below the surface and apparently were ruptured by the force of the explosion, that as the water——

Mr. Silvers: I don't like to interrupt the witness, but I am going to object to the continued speculations as to the origin of things that were not observed. The witness has been asked to describe his observations.

The Court: The objection is sustained. The witness hasn't said that he ever examined these things until after the explosion. He never inspected the wreck.

Q. (By Mr. Nave): Mr. Hill, there was an objection to [587] that end of your testimony. We will go into that later. Will you continue as to what your inspection revealed as to the pilings and the timbers and the framework of the Marine installation?



(Testimony of James Ewing Hill.)

A. Yes, I understand.

The substructure of the wharf in the area of the meter showed the most severe burning. There was evidence of the piers—or the piling, rather, under the wharf around the north side, of oil having burned over the water in that area and there was considerable charring in that area. Where the fire-hoses had had best effect on the piling, there was less charring because you had a cooling of the surface and evidently less burning in that area. It was typical of——

Mr. Silvers: Just a minute. I am going to move to strike that, Your Honor, this reference to where the firehoses had the best effect on the piling.

The Court: Yes.

Mr. Silvers: I think it is most objectionable.

The Court: Strike it.

Mr. Nave: This man is an expert.

Mr. Silvers: He wasn't there when the firehoses were being used.

The Court: The witness may testify as to his expert knowledge and experience. If you wet a piece of wood, it doesn't burn as quickly as a piece of wood that is not wet. [588] We may accept that as a matter of common knowledge.

Q. (By Mr. Nave): Mr. Hill, did you make any particular inspection at the time of your examination as to the condition of certain pilings on the underside of the dock at the water line as to whether or not they were upright or straight or crooked or that sort of thing?



(Testimony of James Ewing Hill.)

A. Some of the piling on the east face of the dock, most closely adjacent to the fore part of the ship Santa Lucia, were displaced to the west and clearly indicated to me——

Mr. Vartan: Just a minute.

Mr. Nave: That's all right.

Q. From your experience, Mr. Hill, as an engineer and fire protection and safety man do you have an opinion as to the cause of the pilings in the water line being broken loose and as indicated in the photograph Respondent's Exhibit B, being in the condition indicated thereon? A. I have.

Q. What is your opinion, sir?

A. Well, it was evident that great force was required to break and displace the pilings, and that that force was from the east side on the basis of the displacement and was in the direction of the engine room of the Santa Lucia.

Q. Mr. Hill, assuming first—let me ask you this question, the gasoline that would be dispensed or would flow through the hose nozzle and connection, similar to the one I have in my [589] hand marked Respondent's Exhibit J, and assuming that this hose, similar hose, was on a hose reel at the position marked on Libelant's Exhibit 2, near the edge of the dock and connected to the "76" gasoline tank, and assuming that this type of hose and a similar type of nozzle had been inserted into the fueling fill pipe of the fishing vessel Santa Lucia some nine feet below the edge of the wharf, can you tell me what the amount of pressure would be exerted by the fuel

(Testimony of James Ewing Hill.)

leaving the nozzle and going into an open tank in that location?

Mr. Silvers: Object to the form of the question, Your Honor, on the ground that it does not include all of the facts.

The Court: Well, it doesn't include all of the facts, but we will take it for what it is worth.

A. The static head of the gasoline to the upstream side of the nozzle would be approximately six to seven pounds per square inch. It would be substantially lower than that where it would be discharged from the outlet of the nozzle and as soon as it reached the opening, of course, there would be very little pressure exerting other than just the impact pressure at the rate at which it was flowing.

Q. (By Mr. Nave): You are familiar, are you not, with the construction—Mr. Hill, with the construction and the type of hose connections that are used in the gasoline industry on the Pacific Coast in marine service stations? [590]

A. Yes, sir.

Q. I will ask you if the type of hose that is on the nozzle in this exhibit, Respondent's Exhibit J, is or is not a typical gasoline hose used in marine service stations on the West Coast.

Mr. Silvers: Objected to on the grounds it is incompetent, irrelevant and immaterial whether it is typical.

The Court: Overruled.

A. The hose is typical of what is used in the marine service stations.

Q. (By Mr. Nave): You will notice in the hose

(Testimony of James Ewing Hill.)

itself, Exhibit J Respondent's, there are some wires that are shown. Will you tell the Court the purpose of those wires, what their function is, and why they are there?

A. The prime purpose of the wires is to serve as a reinforcing for the hose. They serve a so-called secondary purpose, of bonding it—electrostatically bonding the nozzle back to the piping system on the dock. Such wire is brazed to the couplings that are on each end of the hose.

Q. Are you acquainted, Mr. Hill, with the custom and practice on the Pacific Coast in reference to the fueling of wooden vessels by gasoline, as to whether or not a separate bonding clamp is used running from the gasoline hose down to a clamp that would be attached to a wooden vessel?

A. Separate bonding wires are not used in the industry for [591] this type of service.

Q. I will ask you if the bonding device as shown in the exhibit which you have just discussed, being Respondent's Exhibit J, is the usual type of bonding wire that is used in the petroleum industry in marine service installations.

A. That is correct.

Q. Now, the metal that is used in the nozzle itself in this type of nozzle is what? What is that metal?

A. It appears to be, to me, either bronze or brass—at least it is a copper-bearing material.

Q. I will ask you if that type of metal construction and that type of metal itself is customarily used in marine circles in handling gasoline in the industry?

A. That is correct.

(Testimony of James Ewing Hill.)

Q. Mr. Hill, assume that you had a gasoline tank aboard the fishing vessel Santa Lucia and assuming that the gasoline tank was from 30 to 40 gallons in capacity and that the gasoline tank itself was below the deck with a fill pipe coming out at the top of the deck and being sealed in that position with only the outlet being at the deck level, and that to open that would mean the removal of a hand cap, and assuming that a nozzle, similar to the one that is in evidence here, Respondent's Exhibit J, is used, and assuming that the nozzle itself is smaller than the opening of the fill pipe itself, what would happen in the normal seaworthy tank to any amount of gasoline [592] in excess of its capacity that were released into that tank?

Mr. Silvers: Just a moment—pardon me. Did you finish, counsel?

Mr. Nave: Yes.

Mr. Silvers: Object to the question, your Honor, on the ground it assumes facts not in evidence, it is remote and speculative. This witness has not been qualified to answer in the particulars the question refers to, and there is no evidence at all about what type of tank is referred to by counsel's reference to a normal seaworthy tank. For all those grounds we object to the question.

The Court: Overruled.

Mr. Nave: You may answer the question, Mr. Hill.

A. If the tank contained, for example, thirty gallons—I mean, if it had that capacity——



(Testimony of James Ewing Hill.)

Q. Say 30 to 40 gallons.

A. 30 to 40-gallon capacity, and more fuel was dispensed to the tank than its capacity, it would obviously come up through the fill pipe and spill out on deck.

The Court: Incidentally, I want to point out to counsel, I have no evidence as to how much this tank held.

Mr. Nave: Beg your pardon?

The Court: I don't recall any specific evidence as to the construction of this tank, as to what it was made of.

Mr. Nave: Yes, from Captain Hansen's [593] survey.

The Court: I haven't got that yet. All that we have is that it was a tank. I think one of the witnesses said it contained about thirty gallons. But no witness knows anything about the piping or has said anything that had anything to do with anything below deck. All the men from the vessel said they worked on deck, above deck. However, I assume some evidence that I am going to get later on, that will be helpful.

Mr. Nave: I can put Mr. Hill back on after Captain Hansen's survey.

The Court: No, go ahead. You ask Mr. Hill the questions now. I am assuming that you are going to bring in this evidence. You go ahead on that assumption.

Mr. Nave: Thank you.



(Testimony of James Ewing Hill.)

Q. Assuming, Mr. Hill, that the gasoline tank is a metal construction and that it contains some 30 to 40 gallons or would hold 30 to 40 gallons, and assuming that the filling operation was conducted by the use of a hose similar to the one in this exhibit, Respondent's J, and with a nozzle similar to the one on the same exhibit, I will ask you whether or not such a tank, if properly constructed, would rupture if more than the capacity of the tank were released into the fill pipe by this type of hose and nozzle.

Mr. Silvers: I would like to renew my objections to the previous hypothetical questions on the same grounds.

The Court: Overruled. [594]

A. Well, the tank should not rupture, and the material should spill out through the fill pipe.

Mr. Nave: You may examine.

#### Cross-Examination

By Mr. Silvers:

Q. Mr. Hill, you didn't observe any significant evidence of charring on the water side of the pilings when you made your inspection, isn't that correct?

A. I did observe significant evidence of charring on the water side of the piling.

Q. Is it not a fact that most of the charring of the pilings that you observed was on the face of the piling away from the Santa Lucia's berth and under the gas dock?

(Testimony of James Ewing Hill.)

A. It appeared to me to be fairly well distributed around the face of the pilings except for the area in which the pilings were better protected by firehose streams, and that could be expected when you had a fire roughly an hour and a half duration.

Q. Mr. Hill, does Respondent's Exhibit C which I am holding correctly show the condition of the pilings that face the Santa Lucia as they were after the fire and explosion took place?

A. This photograph that you show me here is not part of the dock that faced the Santa Lucia.

Q. Are you sure of that, sir?

A. Is this not the southeast corner of the dock that faced the stern end of the Santa Lucia? [595]

Q. Well, I would like to ask you, what portion of the gas dock does that photograph show, starting from the point to the left of the center and running toward the right edge of the photograph, to help you?

A. That shows——

Q. Before you answer that, may I point out the location of what appears to be the gas hose reel immediately above the section I have called your attention to. Would that refresh your recollection?

A. Yes.

Q. Well, now, what is your answer?

A. I don't think that the photograph adequately illustrates the condition of the piling. It does illustrate the very heavy charring, but it does not illustrate areas in which there was charring—but not as heavy as illustrated on the photograph.

(Testimony of James Ewing Hill.)

Q. These photographs were taken under Union Oil direction, were they not?

A. I was not present or I did not see the photographs taken. I did not direct the photographs to be taken.

Q. Well, you know that some one else at Union Oil did, though, don't you, Mr. Hill?

A. I don't think Union Oil took the pictures.

Mr. Nave: Let it be understood they were taken by an independent photographer. I am sure you know the company did not take the photographs.

Mr. Silvers: I will pass the question.

Q. Your position, as I understand it, whatever the condition of these pilings that faced the Santa Lucia were immediately after the explosion, that this was principally the result of the effect of the use of the firehoses?      A. No.

Q. Is that your position?

A. No. Not entirely.

Q. I understood you to say that the pilings were less charred in the area where the firehoses had their maximum effect?

A. The firehoses were not the only controlling factor.

Q. The firehoses were one of the controlling factors so far as the spread and intensity of the fire were concerned, were they not?

A. I think the wind was a factor also, because the wind was from the southeast, and you are showing me or you have shown me a picture of the southeast corner of the dock, and the most severe burning

(Testimony of James Ewing Hill.)

was under the north half of the dock and not that portion.

If you had an illustration of the north half of the dock that corresponds to that, it would be better.

Q. Mr. Hill, is it your position that the firehoses that were played upon the pilings of the dock did not have any significant effect?

A. I did not say that. [597]

Q. They did, didn't they? A. They did.

Q. And do you know when the fire hoses were first applied to the Santa Lucia side of these pilings before the fire and explosion took place—how long after the fire and explosion began did the first fire hoses play on that face of the pilings? Do you know that, Mr. Hill?

A. I think the fire hoses played first on the south and possibly the north face of the dock.

Q. My question, Mr. Hill, is: Do you know, and if you don't you may say so, do you know how long after the fire and explosion began the fire hoses played on the face of the pilings of the gas dock that faced the Santa Lucia?

A. I don't know the exact time.

Q. Do you know approximately? Was it five or ten minutes afterwards?

A. The first fire hoses that probably had been directed directly on the east face would have to have been directed from the Avila, but, as I said before, the relative burning around the face of the pier was not simply a function of water protection from the fire hose.



(Testimony of James Ewing Hill.)

Mr. Silvers: We will ask that all that go out as non-responsive.

The Court: No; I understand. Motion denied.

Q. (By Mr. Silvers): You know as a fact, don't you, [598] Mr. Hill, that the tug Avila did not get under way immediately? A. That's correct.

Q. After the fire and explosion took place, you know that, don't you? A. That's correct.

Q. You know that a period of at least five minutes went by before the tug got under way, don't you? A. That's correct.

Q. You know that the tug picked up Mr. McMillan, who had come from his home on the shore before it began, to play water on the pilings?

A. I am not sure of that time factor.

The Court: He wasn't there, counsel. He only knows what people told him.

Is that correct?

A. That's correct.

Q. (By Mr. Silvers): Isn't it a fact, Mr. Hill, that there was no operational tests made of the integrity of the pipeline that ran from the meter to the gasoline hose following this fire and explosion?

A. What do you mean by "operational test"?

Q. I mean, by passing the liquid or fuel through the pipe as distinguished from simply a visual examination.

A. There was no pressure test made of that pipe.

Q. Was there anything except a visual examina-



(Testimony of James Ewing Hill.)

tion made of [599] that portion of the pipe, the portion that ran from the meter to the gas hose?

A. No; and I think that my past experience in inspecting piping after fires led me to sound conclusions as to the condition of the pipe.

Mr. Silvers: We will ask that go out.

The Court: The answer is stricken as not responsive. Stricken.

Mr. Silvers: No further questions.

Mr. Vartan: No questions.

The Court: We will take a ten-minute recess.

(Recess.)

Mr. Nave: Will you resume the stand, Mr. Hill?

#### Redirect Examination

By Mr. Nave:

Q. Mr. Hill, there is one question I didn't ask you on direct—and I ask leave of the Court to inquire at this time—that is in reference to Mr. Caldwell's physical examination. Did you see Mr. Caldwell on the day of your first arrival at the scene of the explosion and fire? A. Yes, sir.

Q. What did you observe in reference to his injuries, as to his person or as to his clothing at that time?

A. Well, his face and his forehead, his brows and the front part of his hair, indicated a light flash burn with first [600] degree or superficial flash burns.

Q. Thank you.

(Testimony of James Ewing Hill.)

A. No evidence of burning of his hands.

Mr. Nave: That's the only thing I want to ask.

Recross-Examination

By Mr. Silvers:

Q. I wasn't sure I heard you, Mr. Hill. You say you were first at the scene of the fire and explosion on the day following the fire and explosion?

A. That's correct.

Mr. Silvers: Thank you.

(Witness excused.)

Mr. Nave: Mr. Johnson, will you please take the stand again for a question or two?

LESTER JOHNSON

recalled as a witness on behalf of the respondents, having been previously duly sworn, testified further as follows:

Redirect Examination

By Mr. Nave:

Q. Mr. Johnson, you were on the stand this morning and testified? A. Yes, sir.

Q. Mr. Johnson, you testified this morning that you had been assistant foreman of the Avalon installation for a number of years prior to this explosion and fire? [601] A. That's right.

Q. And during that period of time that you had been there had you had experience, yourself, in fueling of gasoline and Diesel on vessels and ships at

(Testimony of Lester Johnson.)

this Marine Service installation? A. I have.

Q. And are you acquainted with the custom and practice and the instructions from the Union Oil Company in reference to the dispensing of gasoline when certain quantities are asked for?

A. Yes.

Q. Now, I will ask you, assuming that someone requesting gasoline would say in response to an inquiry that it would take approximately a given amount, such as thirty gallons, what is your custom and practice in respect to cutting them off or having men cut themselves off?

A. Well, it's common practice if a man asked for approximately—for an approximate amount of gasoline, would be to let him have the hose and take what he wanted. He would have control of that.

If a man asked for a certain amount, just said he wanted ten gallons, we would shut him off at ten gallons.

If he said he wanted a certain amount in money, we would look up and see how many gallons would be in the two dollars' worth or five dollars' worth and give him that amount.

The Court: Is it part of the rules of your company that as gas is flowing through the feed pipe that the attendant [602] should watch to see how much gas has been delivered?

A. The practice of the company is to watch it, yes, but also——

The Court: That is the answer. You said yes. Go ahead and finish it now.

(Testimony of Lester Johnson.)

A. The boats coming in to fuel, ordinarily you pass them their gas hose or their Diesel hose and they then, most of the time, take water, so you walk away from your meter, you never watch, you never keep your eyes right on it unless you are going to shut down, and you go and give them the water hose and maybe they want five gallons of oil, and if they did, they pass up their can and you go into the warehouse and fill up their can full of oil, bring it back and pass it down to them. They have control of the gasoline.

I have served gasoline when the man is—his tank is full and he has let the spring go or he has closed his nozzle, and you would still be drawing oil, so when you came out he was finished taking the gasoline, but you wouldn't be right at the meter.

Q. (By Mr. Nave): Thank you——

A. You would take the meter reading as he had finished.

Mr. Nave: Thank you, Mr. Johnson.

Mr. Silvers: No questions.

Mr. Vartan: No questions.

(Witness excused.) [603]

Mr. Nave: Now, your Honor, that's all the witnesses that we have here this afternoon. As we indicated in chambers, our procedure tomorrow would be to have the doctor.

(Thereupon an adjournment was taken to 10:00 o'clock a.m., Tuesday, September 10th, 1957.) [604]



September 10, 1957—10:00 A.M.

Mr. Silvers: Your Honor, at this time we wish to make a statement with respect to the petition for limitation in Action No. 27211 in Admiralty, now pending in this court. Counsel for the claimants in that matter have agreed, and are willing to stipulate, which is acceptable to us, that matter may be heard and determined by your Honor, and I have been informed by Mr. Whelan that answers to our petition in that action have been filed as of this morning, and we would like to enter the stipulation on the record at this time that the matter may be heard and determined by your Honor.

Mr. Whelan: And these answers, your Honor, are for four cases, the cases of Joseph Salmeri, the case of Frank Pedrasaz, the case of Antoine Belleci and the case of Antoine Belleci as Administrator of the Estate of Jacques Cardinale.

The Court: Did you also file claims for Nino Tarantino or——

Mr. Vartan: That case, consent decree has been entered, your Honor.

The Court: At the beginning of the trial of these suits which we are now hearing, the petition for limitation was called to my attention and at that time I suggested to counsel for all sides that that petition be tried simultaneously with the trials now being conducted and that the evidence [605] received at those trials be deemed applicable for determination of the merits of the petition for limitation.

Accordingly, counsel have consented to file an



answer and have consented that the petition for limitation be tried simultaneously with the other libels.

Mr. Vartan: That is correct.

The Court: And that is what I have done. So, at the time I pass upon the merits of these suits we are now trying, I will also pass upon the merits of the petition for limitation, and, I take it, that there will be no other evidence offered by either petitioner or the claimants on that petition for limitation, other than what has been received by the Court in connection with the trial of the suits now pending.

Mr. Silvers: That is correct, your Honor.

The Court: All right. You proceed.

Mr. Nave: Call Doctor Civello.

### ARTHUR A. CIVELLO

called as a witness by and on behalf of Respondent Union Oil Company, having been first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

The Clerk: Please state your name to the Court, sir.

The Witness: Arthur A. Civello.

### Direct Examination

By Mr. Nave:

Q. Doctor Civello, will you please state your medical [606] training, where you studied medicine, the colleges and schools, your background medically?

A. Yes, sir. I graduated from the University of California Medical School in 1944. I had one year

(Testimony of Arthur A. Civello.)

of interneship, three years of orthopedic specialty training at the University of California Hospital, two years as Chief of the Orthopedic Department of the 279th Station Hospital in Berlin, Germany. And I started practicing orthopedic surgery in 1950.

I am a member of the American Academy of Orthopedic Surgeons, having passed their Specialty Board examination in 1953 and admitted to the Academy in 1955.

I am a member of the San Francisco Medical Society, California Medical Association, American Medical Association, Western Orthopedic Association, and the American Academy of Orthopedic Surgeons.

I am assistant clinical professor of orthopedic surgery at the University of California Medical School.

Q. I take it, then, Doctor, that you have specialized in the field of orthopedic surgery?

A. Yes, sir.

Q. That is your specialty? A. Yes, sir.

Q. Doctor, you examined several people at my request this past week, did you not?

A. Yes, sir. [607]

Q. And one of the men examined was Joseph Salmeri? A. Yes, sir.

Q. Will you just state what the examination was that you conducted? First, may I ask you, did you take any X-rays in connection with Mr. Salmeri?

A. Yes, sir.

Q. You may refer to the X-rays, and you just

(Testimony of Arthur A. Civello.)

go ahead and state what your examination consisted of, please, what you found.

A. The examination consisted of the history of the injury, his medical treatment, his past history as far as previous injuries or illnesses were concerned, the complaints that he mentioned—that is, any symptoms—a complete surgical examination and orthopedic examination, X-rays, review of the X-rays—do you wish me to go through the history?

Q. Yes; if you will, please.

A. All right.

The Court: I don't think it is necessary for the history. This doctor was not retained to treat the patient. He was retained only to examine and to evaluate the injury alleged to have been sustained.

Mr. Nave: Only, your Honor, with reference to subjective complaints. It goes to the question of present complaints that the patient may have.

The Court: All right. [608]

The Witness: Well, limiting the discussion then to the present complaints. The patient reported pain in the right wrist with movement, and aches where he has scars along the forearm. He always feels as if there is a tight grip, and he mentions that that feeling is about the site of his fractures.

When he washes his face, he feels a sharp pain along the middle finger of the right hand, and he states that there is a tingling sensation if he taps the scar along the radial styloid.

He has occasional pain in the right shoulder and when he exercises he feels a click. Throwing objects

(Testimony of Arthur A. Civello.)

hurts the right shoulder, which may also ache when he lies down.

He reported that three months ago he developed some pain along the left side of the neck and he saw his private physician who advised him that there was nothing wrong and he stated that the neck discomfort was brought on whenever he started to smoke.

He reported no other symptoms or pains and he states except for the fact that the right arm feels weak and hurts, he has no head symptoms, and he does not feel that he is capable of working as a fisherman.

Also, he mentioned the fact that he could not fully extend the first, third and fifth fingers of the right hand. [609]

Q. (By Mr. Nave): Now, Doctor, did you take some X-rays in connection with this man's arm?

A. Yes, sir.

Q. Do you have the X-rays present?

A. Yes, sir.

Q. Will you take the X-rays and tell his Honor what the X-rays reveal?

The Court: First have the X-rays marked in evidence.

Mr. Nave: Yes. We offer them, your Honor.

The Court: Leave them right in the envelope. And mark the envelope, consisting of how many X-rays are there, Doctor?

The Witness: Six X-rays.



(Testimony of Arthur A. Civello.)

The Clerk: Respondent's Exhibit P introduced and filed into evidence.

(Group of six X-rays received and marked Respondent's Exhibit P in evidence.)

The Witness: The X-rays revealed a healed fracture of the right clavicle, a healed fracture of the right radius, and a non-union of an ulnar fracture, and a metallic pin across the olecranon process of the ulna.

There was also some demineralization of the wrist and hand and some soft tissue calcifications in the region of the mid-shaft fractures which appear smooth and old. [610]

The Court: What do you mean, Doctor, when you say the X-ray revealed a non-union of the ulna fracture?

The Witness: The patient evidently sustained a fracture of the right radius and right ulna. He had several operative procedures which hastened or resulted in union of the radial fracture but, as sometimes happens, the ulna proceeds to non-union, that is, a failure of union at that fracture site.

The Court: So there is a space or an interval between the bones, two pieces of the bone of the ulna?

The Witness: Yes, your Honor.

The Court: How big is that space?

The Witness: I believe it measures about two to three millimeters. It's probably filled with scar tis-



(Testimony of Arthur A. Civello.)

sue. So instead of a bony union, he has a fibrous union.

The Court: And how are those two pieces held together, by a metallic substance?

The Witness: According to the history, the patient had probably rush rods placed down the intramedullary canal of each bone and these were subsequently removed at two separate operations in, I believe, 1956.

The Court: Is that an indicated treatment?

The Witness: Yes, sir.

The Court: For an injury of this type?

The Witness: Yes, your Honor. [611]

Q. (By Mr. Nave): And, Doctor, what other conclusions and findings did you make in reference to Mr. Salmeri's condition at the time of your examination?

A. Well, on examination he had very minimal limitation of motion about the right shoulder and slightly more limitation of motion about the right wrist and elbow which we felt was consistent with his injuries and plaster immobilization.

He had some weakness in grasp and some limitation of extension of the first, third and fifth fingers of the right hand. He was able to make a good fist with his hand. He had no limitation of flexion of the fingers.

The Court: You speak of some limitation in this respect and some limitation in that respect?

The Witness: Yes, sir.

(Testimony of Arthur A. Civello.)

The Court: Did you make an appraisal in terms of percentage?

The Witness: Yes, sir.

The Court: Will you give us that, please?

The Witness: I would say that as far as limitation in the right shoulder is concerned, that he has about five per cent limitation of motion.

In the right elbow I would estimate about 20 to 25 per cent.

And in the right wrist, I would estimate [612] between 35 and 45 per cent.

He has approximately 60 per cent loss in grasp of the right hand.

The Court: Would you say, Doctor, that he has a limitation of 60 per cent on the turning, the rotating of the hand?

The Witness: Rotations, in pronation he has less than 50 per cent; supination he has about 62½ per cent of supination—and those are considered as elbow motions.

Flexion, on the hand, is only decreased by about five per cent, and extension may be 15 per cent. And averaging those out, I think you might arrive at a suitable figure.

The Court: Would you say that this man Salmeri required a bone graft operation on the ulna?

The Witness: At this time, yes.

The Court: Would you just explain the nature of that operation to us, the details and what is the prognosis?

The Witness: The bone site, the fracture site

(Testimony of Arthur A. Civello.)

itself, is exposed, it is relatively easy to visualize, the scar tissue is removed, the bone ends are usually freshened, and any type of a bone graft may be used. It may, obtained from the tibia, it may be obtained from the iliac crest. Bone banks may be used. And then a long arm cast is applied and plaster immobilization is used until the fracture heals. [613]

Placing a bone graft is a definite aid to union in this type of a situation.

The Court: It doesn't appear that this doctor differs very substantially from Doctor Cox.

Mr. Nave: Yes.

The Court: In his appraisal of this man's injuries.

Mr. Nave: That's true.

The Court: All right, sir.

Q. (By Mr. Nave): Now, Doctor, the operation that you have indicated that this man will require for the ulna, that operation would be disabling, would it not? A. Yes, sir.

Q. And did you state your opinion as to the length of time of such disability?

A. Considering he is 36 years old and a fairly healthy individual, I would say that plaster immobilization would extend four to six months.

Q. And what is your opinion as to the future following such an operation as to a man's disability or ability to resume his normal occupation as a fisherman?

A. I would feel that finally doing the bone graft,

(Testimony of Arthur A. Civello.)

obtaining bony union, that the patient would then be able to use his arm and hand to a greater advantage and with a lesser amount of pain, which in itself would then increase his range [614] of motion about the right wrist and right elbow, possibly about the right shoulder; I would also feel that with——

The Court: Increase it to what extent, Doctor?

The Witness: Well, I would say this, that the man would have a limitation of motion about the right wrist and elbow; I would approximate in the range to ten to 15, 20 per cent. I would expect his grasping power to improve because with persistent use of the hand there should be a definite amount of improvement, with some limitation of motion; he would probably have some limitation in grasp, certainly not to the degree that he has now.

I would feel that with a better range of motion, with a lesser amount of discomfort, with a union of the present non-union, that the man could return to work as a fisherman, feeling and knowing that he would have some limitation of motion, but I don't think that it would be disabling.

The Court: Would you at the present time say he would be unable to perform the arduous duties of a fisherman?

The Witness: Yes, sir, your Honor.

Mr. Nave: Does your Honor prefer the cross-examination be conducted as to each patient or should I continue as to the others?

The Court: I don't know. I cross-examined the doctor summarily.



(Testimony of Arthur A. Civello.)

Mr. Vartan: I just have one question. [615]

The Court: Suppose we take up each patient separately.

Mr. Nave: I think it would be better.

The Court: Do you have any questions to ask the Doctor?

Mr. Vartan: Yes, one question.

The Court: I didn't observe much difference.

Mr. Vartan: Well, I think——

The Court: All right, go ahead.

#### Cross-Examination

By Mr. Vartan:

Q. Doctor, from your examination did you also come to the conclusion that there is a necessity of a tendon graft operation?

A. No, sir. This man has limitation of extension of the thumb, middle and little finger which I felt was due to adherence of the extensor muscles in the forearm along these two scars that he had. He does not need a tendon repair. He simply needs the placement of some fatty tissue between the scar and the muscle bellies, which probably would improve his range of motion in that.

Q. Doctor, didn't you find that he has no control over the thumb, and in certain positions that it drops, drops down next to the palm?

A. No, sir. I felt that he lacked full extension or abduction of the thumb, but that he had active motions. The [616] tendons were intact.



(Testimony of Arthur A. Civello.)

Q. What specific findings did you make with reference to the thumb?

A. As far as the right thumb is concerned, I felt that he had 30 per cent loss of abduction—that would be motion in this direction (indicating); and 30 per cent loss of dorsiflexion of the right thumb, those motions being limited, as mentioned before, by scar adherence.

Q. I will ask you a specific question, Doctor: You having in mind other medical testimony here, didn't you find that there is a complete loss of action of the extensors of the thumb, the patient being unable to extend his thumb because of loss of activity of the long extensors?

A. No, sir. The man has an intact extensor tendon of the long extensor tendon of the thumb. I feel that his type of injury bears this out. He had fractures of both bones of the forearm and they were simple fractures, they were not compound fractures.

The Court: Weren't they comminuted fractures, Doctor?

The Witness: I would presume so from the—by 'simple,' I mean there was no breaking through of the bone through the skin, your Honor.

Q. (By Mr. Vartan): Doctor, how does a doctor tell whether there has been [617] the loss of—complete loss of extensor tendon function? That does not show in X-rays?

A. No, sir; it shows on clinical examination.

Q. I see.

(Testimony of Arthur A. Civello.)

The Court: What would be the cost of this bone graft operation or reasonable professional charges?

The Witness: Well, your Honor, I can only quote our usual office fee. For a bone grafting procedure we would charge in the neighborhood of three to four hundred dollars, including the initial examination and total follow-up care.

The Court: And what would be the hospital charges, approximately, for this operation?

The Witness: Well, the patient would have to be hospitalized for ten to fourteen days. Hospitalization would run in the neighborhood of probably \$30.00 a day. That would be three hundred to four hundred and twenty dollars, and I would say that a hospital fee of \$500.00 would not be unreasonable.

He would have cast changes about every four to six weeks. He would need roughly four cast changes. The hospital charge for the plaster runs in the neighborhood of ten to twelve dollars per cast change.

He would need X-rays at each time, and that would also run about twelve and a half dollars.

The Court: Would it be fair to say that the total reasonable charges for the operation, care, post-operative care, [618] hospitalization and treatment would be between one thousand and twelve hundred dollars?

The Witness: Yes, sir.

The Court: Now, then, after that he would be an out patient, would you say, for about six months?

(Testimony of Arthur A. Civello.)

The Witness: Four to six months, followed in our office.

The Court: He would have to come in occasionally?

The Witness: Yes, sir.

The Court: And during that period he couldn't do any hard work, could he?

The Witness: No, your Honor.

The Court: He really should be convalescent and rest his arm during that period?

The Witness: Yes, your Honor.

The Court: All right, six.

Mr. Vartan: One more question, your Honor.

Q. (By Mr. Vartan): What is your opinion about the success of the bone graft operation? They don't always turn out; I mean, sometimes you have to do them over again, don't you?

A. Well, that is certainly a possibility. I could say this, that they are usually successful in this particular site.

Q. That is as far as you can go, though?

A. No; I would have to say that there is a possibility that [619] it may not go on to union, but the probability is that it would unite.

Q. If it doesn't, if there is no union at the first attempt, then the entire procedure as you have outlined would have to be repeated, isn't that true?

A. Yes, sir.

Q. And there are cases where they may have to repeat it several times, isn't that right?

A. Yes, but very unlikely.

(Testimony of Arthur A. Civello.)

The Court: There are cases where you get an osteomyelitis?

The Witness: Yes, your Honor.

The Court: I mean, you can't predict with certainty?

The Witness: All you can do is estimate and evaluate as to what your previous experience has been and what the experience of other orthopedic surgeons has been.

The Court: Do you have any questions?

Mr. Silvers: No questions.

#### Further Direct Examination

By Mr. Nave:

Q. Now, last week, did you also examine Mr. Frank Pedrasaz at my request? A. Yes, sir.

Q. And would you state what history you took from him, particularly with reference to any present complaints? [620]

A. Yes, sir.

I think, importantly, we might mention the fact that the patient returned to work in July or August of 1955, working as a fisherman for three to four months, and then changed jobs so that now he is a butcher in a slaughter house.

He has seen no doctors since his return to work in July or August, 1955.

As far as his present complaints are concerned, in taking the history from the patient, it seemed to me that he had a contusion or a sprain of the right



(Testimony of Arthur A. Civello.)

ankle and a fracture of the right wrist, and it seemed that he had a bone grafting procedure performed to the fracture of the right wrist. So as to his present complaints, he felt that the right ankle was uncomfortable over the medial malleolus with prolonged weight bearing.

The bone graft was taken from the right iliac crest and he stated that with cold weather he gets a pain in the entire right leg.

As far as the wrist was concerned, he felt that the fingers of the right hand felt asleep and that cold weather caused some discomfort.

He had pain about the right wrist and he pointed to the distal part of the radius and he stated that occasionally he had to use his left hand in his [621] present occupation.

He was examined, general physical examination and orthopedic examination. He demonstrated no atrophy of the muscles of the right arm or forearm.

He had some difference, one-quarter of an inch, which is not too much, the right thigh being less than the left, but he had amputation in 19—I believe 1939—of all the toes of his right foot.

His grasp—he would feel—would be decreased at least on examination by, I would say, 40 per cent, which was hard to understand when you realize that he had no atrophy of the arm or forearm and he also was able to make a full fist with the right hand, and also the right hand had definitely more callous formation than the left hand, showing more use of the right hand than the left.



(Testimony of Arthur A. Civello.)

His limitation of motion about the right wrist was of very slight degree, I would say probably be five per cent.

Q. Did you make any examination, Doctor, testing as to his gripping power? A. Yes, sir.

Q. What did you find?

A. Well, as I mentioned, his grip on formal examination, it would appear that he had apparent loss of 40 per cent, and, as I mentioned, this was somewhat hard to understand in the [622] light of the remainder of the physical examination.

The Court: Doctor, did you know that he had a section of the transverse carpal ligament——

The Witness: I had no medical reports available to me, your Honor.

The Court: If I tell you that the record of the U. S. Marine Hospital shows that in February, 1955—he had an operative procedure in 1955, February, and there was a bone graft of the right radius and a section of the transverse carpal ligament, would that explain why he would have this loss of power in his grip?

The Witness: No, your Honor. I feel that to have a loss in grasping power of that degree that the man would have to show atrophy of the musculature, and also he would probably have more callous formation on his left hand than he had on his right.

There is another thing that you have to consider, on sensory examination to pinprick the man demonstrated a complete hemianesthesia over the right

(Testimony of Arthur A. Civello.)

side of the body. This is an anatomical finding, it is not an objective finding. I would feel——

The Court: Was this hypesthesia over the entire right side of the body?

The Witness: Yes, your Honor, including the right leg, right trunk, right shoulder, right face, right head, [623]

The Court: What is that? Indicative of some brain injury?

The Witness: No, your Honor. The cranial nerve examination was normal; the reflexes were normal. The man has no atrophy of his musculature, and you might call it a functional thing.

The Court: Where is the thenar muscle located?

The Witness: The thenar muscle group?

The Court: Yes.

The Witness: This is the thenar muscle group here, your Honor. It's the bulk of the musculature of the thumb.

The Court: The notation from the Marine Hospital reads that examination reveals a flattening of the right thenar muscle group and hypesthesia over the right hand on the volar aspect of the index, middle and radial half of the ring finger.

Now, did you find any flattening of the right thenar muscle group?

The Witness: No, your Honor. Might I ask what the date of that examination is?

The Court: Apparently this is a notation from October, '54, U. S. Marine Hospital.

The Witness: Well, that finding would certainly

(Testimony of Arthur A. Civello.)

be understandable. It is a month after his injury and three years, almost three years have elapsed since that time. [624]

Q. (By Mr. Nave): Doctor, do you have an opinion as to whether or not Mr. Pedrasaz is disabled from working? A. Yes, sir.

Q. What is your opinion?

A. I feel that the patient is capable of continuing his occupation as a fisherman, that he has this limitation, minimal limitation of motion in the right wrist which requires no specific treatment at this time, and which you might consider as being permanent since three years have elapsed since his injury.

Q. Doctor, did you have any X-rays made in connection with Mr. Pedrasaz? A. Yes, sir.

Mr. Nave: And I will ask those X-rays be produced in evidence.

The Clerk: Respondent's Exhibit Q introduced and filed into evidence.

(Six X-rays received in evidence and marked Respondent's Exhibit Q.)

Q. (By Mr. Nave): I hand you Respondent's Exhibit Q, being the X-rays of Mr. Pedrasaz, and I will ask you to state to his Honor what these X-rays reveal?

A. He has an area of calcification along the periosteum of the right ilium which indicates the site of the bone graft, [625] and he has a healed fracture of the distal end of the radius. He had

(Testimony of Arthur A. Civello.)

some os porosis of the bones of the right foot consistent with his 1939 amputation due to frost bite.

Basically those were the findings.

Mr. Nave: You may examine.

### Cross-Examination

By Mr. Vartan:

Q. Doctor, didn't your X-rays of the right wrist indicate an impacted fracture, a healed impacted fracture?

A. I think that you could consider that as being an impacted fracture at the time of injury.

Q. All right. Now tell his Honor what impacted fracture means.

A. An impacted fracture is one where one fragment is driven into the other, and I would presume that that was the reason for the bone graft procedure, to restore length to the radius.

Q. Well, the ends of the bone that finally united indicate an impaction, in other words, as the man's wrist exists today, it is an impacted fracture healed in an impacted manner?

A. This type of injury is always an impacted fracture, just from the nature of the trauma. You can't call it a disimpacted type of fracture and the amount of impaction is not of a very great degree because the radial length has been restored.

Q. Doctor, what does the term "radial deviation" mean? [626]



(Testimony of Arthur A. Civello.)

A. Radial deviation means a shift of position of the radius to the radial site.

Q. Didn't you find from your history and examination that that wrist, that impacted fracture which was healed with the aid of a bone graft, shows a tendency towards radial deviation?

A. Well, I would say no. A tendency to radial deviation doesn't mean anything to me because it either has radial deviation or it doesn't have radial deviation.

Q. All right. Does it have radial deviation?

A. No, sir.

Q. You stated that he had a contusion or sprain of the right ankle. If I were to call your attention to the records of the Marine Hospital, dated 12-8-54, the notation that he had a fracture of the articular surface of the right tibia, would your findings be consistent with that finding taken at that time?

A. Well, I would say this, that if the man had a fracture of the articulating surface of the right tibia, it has healed in excellent position, excellent alignment, and there is no evidence of such injury at this time.

Q. In testing a man's wrist, I assume—what is it, dorsiflexion of it—all right.

Now, what were your findings of dorsiflexion of the injured hand as compared with the left or uninjured hand?

A. 65 degrees on the right; 68 degrees on the left.



(Testimony of Arthur A. Civello.)

Q. Are you sure that it wasn't 75 degrees on the left? [627] A. Yes.

Q. What is the palmar flexion?

A. 58 degrees on the right; 62 degrees on the left.

Q. And show his Honor what is meant by palmar. A. (Demonstrating.)

Q. All right. Now, that limitation in those figures is a permanent situation, is it not?

A. Yes, sir.

Q. Did he complain to you of tenderness and swelling of the right wrist when using or gripping too often?

A. He mentioned the fact that his right hand did ache.

Q. Having in mind the history which you obtained, is such a complaint unusual?

A. Oh, I would say that if the man had minimal subjective symptoms that they would not be unusual. I don't feel that they would be disabling in view of the physical examination, in view of the X-ray findings.

Q. Doctor, you said that it was hard to understand his loss of grip or grasp. Did you mean to imply that this man was a malingerer?

A. I didn't mean to infer anything. All I mean to draw—mention the fact that this man has no findings, other findings, which would substantiate a loss in grasping power of that degree in the right hand.

Q. Doctor, does the disturbance or injury to the

(Testimony of Arthur A. Civello.)

sensory [628] division of the radial nerve in a fracture and subsequent bone graft operation of this kind, doesn't that ever result in a loss of grasp?

A. Oh, I don't think that I have mentioned the fact that the patient might not have some loss in grasping power, but I would certainly place it in the percentage of his limitation of motion. Grasp is a function of the median nerve and the ulnar nerve which serve the flexors of the fingers.

Q. This man had a comminuted fracture, did he not, of the distal end of the radius?

A. Yes.

Q. All right. The comminuted fracture could have severed the field of the sensory nerves in that area, could it not?

A. It could have, but it didn't.

Q. How do you know it didn't?

A. He has no sensory loss at this time.

Q. How did you determine that?

A. Pinprick examination.

Q. Is it your testimony that this man's complaints of loss of feeling and numbness in the fingers of the injured hand are not based upon fact?

A. This man has a total loss in hypesthesia on the right side of the body, not limited to the radial nerve itself, and I don't think you could state that the man had a radial nerve injury. He has no motor loss and he has no reflex changes [629] and he has no atrophy.

Q. Let me ask you, Doctor, when you tested the fingers of the right hand, the fingers that he com-

(Testimony of Arthur A. Civello.)

plained of numbness in, did you find from your examination of the fingers alone that he had sensitivity there?

A. The man had sensitivity on his whole body but, as I mentioned before, he mentioned the fact that the entire right half of the body had a lesser degree of sensation than the left half of the body, no particular area more hypesthetic, you might say, than any other part of the body on the right side.

Q. I ask you again: When you examined by pin-pricks or any other method for the numbness of the fingers of the right hand, did you find that the numbness was not there?

A. No. I think I have already testified that the man has a hypesthesia of the right half of the body. So, therefore, I would have to include the area of skin supplied by the radial nerve.

Q. You said in your opinion his grasp was 40 per cent in the injured hand, is that right?

A. Yes, sir.

Q. And how did you test that?

A. By dynamometer.

Q. In your opinion, is that condition permanent?

A. Well, I don't feel that his grasp on examination is [630] a true indication of what the man should have.

Q. Well, let's come out with it, Doctor. Do you think when he performed that test with the—whatever that grasping meter or thing is—do you feel that he was trying to pull a fast one?

A. I don't know. All I can say is that from the

(Testimony of Arthur A. Civello.)

remainder of my examination I would certainly feel that the man would have a greater amount of grasp.

Q. If I were to call your attention to the records of the Marine Hospital where tests there show a lack of grasp, an absence of grasp up until eight to nine months after this injury, would that tend to change your views?      A. No, sir.

Mr. Vartan: That is all.

Mr. Silvers: No questions.

The Court: Thank you, Doctor.

Mr. Nave: One more patient, Judge.

#### Further Direct Examination

By Mr. Nave:

Q. You also examined another patient named Mr. Belleci?      A. Yes, sir.

Q. Will you state what history you obtained from Mr. Belleci as to his complaints?

A. Yes, sir. The patient reported that with foggy weather he had some discomfort over the left side of his low back and [631] he states that it possibly could ache for one hour to two days, but stated that it was not disabling.

Occasionally he had some discomfort when he stooped, but lifting caused no discomfort.

He had no pain in his legs, no arm symptoms, no numbness or tingling, but he states that occasionally he had some discomfort up the left side of the neck.

Also, the man initially was given a back support, which he had not worn for the past six months.



(Testimony of Arthur A. Civello.)

When he returned to work in September, 1955, he returned to light duty, but states that he does everything at the present time.

Examination—I could shorten this by stating that on physical examination—revealed nothing particularly.

The orthopedic examination was also normal.

The patient had no list, no sclerosis, no tenderness, no muscle spasm, and a complete range of motion.

The straight-leg raising maneuver was normal, the Lasegue's sign was normal, cranial nerves were intact, reflexes were normal, sensation was normal, and motor power was normal.

The Court: Did you take X-rays of this man's T-12? Tell the lawyers what T-12 is.

The Witness: T-12 is the 12th dorsal body, that is, there are seven cervical vertebrae, 12 dorsal vertebrae, and five [632] lumbar vertebrae—five, four, three, two, one, yes, your Honor.

The Court: Do you want to put these X-rays in evidence?

Mr. Nave: Yes, your Honor. I will put the X-rays in evidence.

The Clerk: Respondent Union Oil Company's Exhibit R introduced and filed in evidence.

(X-rays received and marked in evidence Respondent Union Oil Company's Exhibit R.)

The Court: This man claims injury to his back. You offer them in evidence?



(Testimony of Arthur A. Civello.)

Mr. Nave: Yes.

The Court: Any objection to that?

Mr. Vartan: No, your Honor.

The Court: How many X-rays are there?

The Witness: Eight, your Honor.

Q. (By Mr. Nave): Doctor, first let me ask you what do the X-rays show as to anything abnormal?

A. He had some narrowing of the fourth intervertebral disc space and hypertrophic changes at all levels, and the anterior vertical height of the 12th was somewhat less than the posterior height, and there was some, as mentioned before, some [633] fringing.

Basically, those were the findings.

Q. And do you have an opinion as to the cause of the narrowing that you mentioned and the hypertrophic changes?

A. Oh, I think the hypertrophic changes and the narrowing are consistent with his age. The difference in the vertical height could be very easily determined as far as the cause is concerned if you had the initial X-rays.

The Court: Would you say they give evidence of degenerative arthritis?

The Witness: Yes; there is evidence of degenerative arthritis.

The Court: And assuming that the X-rays taken immediately following this explosion, September, 1954, showed this condition to be present in this man's back, would a jarring or injury bring about

(Testimony of Arthur A. Civello.)

an aggravation of that condition which would cause him pain?

The Witness: Well, I feel that the man, according to the history, had an injury, he had pain, which is part of the record, I would feel that there would be no specific aggravation of the condition itself. I think that his pain could be explained on the basis of his injury, and we know that degenerative arthritis is a progressive thing.

The Court: Could it be aggravated by trauma?

The Witness: If it brings on pain, I would say yes. But to imply that the pain and the aggravation would appreciably [634] alter the hypertrophic changes, I would say no. I think it is a matter of what one means by aggravation. If one means the onset of pain, I think the answer is yes. If you mean that the arthritis is going to be made definitely worse over and above what you might expect with the passage of time, I think that the answer would probably be no.

Q. (By Mr. Nave): Did you find any evidence, Doctor, that this man has been disabled from pursuing his occupation?

A. I think that the man speaks fairly well for himself. He is doing his regular occupation. He lifts without difficulty. He has a normal physical examination. And a man of this age, if you wanted to go as far as to the symptoms during foggy weather, they are also consistent with his age and X-ray findings.

Mr. Nave: Thank you. You may examine.

Mr. Vartan: No questions.

The Court: All right.

Mr. Silvers: No questions.

(Witness excused.)

The Court: I was very much impressed with the medical testimony offered by both sides here. It is refreshing to have competent doctors so fairly and impartially answer and present the result of their examination. It is indicative of very high professional standards of the medical profession [635] and it is refreshing in this case.

Mr. Nave: May we have our morning recess?

The Court: All right.

(Short recess taken.)

Mr. Nave: At this time, your Honor, I would request Mr. Silvers to produce the reports of the survey.

The Court: Oh, yes; you were going to give him the reports of your survey.

Mr. Silvers: Your Honor, I have survey reports for the years 1954, '53 and '52, which I will give to Mr. Nave at this time, of the boat Santa Lucia. And, if your Honor thinks it will be helpful, we also have the sketches of the various parts of the ship, the anatomy made by Captain Hanson, the surveyor.

The Court: I think it would be helpful. We have at the present time no sketch of this ship showing the layout of the various parts.

Mr. Silvers: It shows the engine room detail.

The Court: It might be very helpful.

Mr. Silvers: If it is agreeable to everyone, I will offer these into evidence at this time. At this time I am referring to six photostatic diagrams, which I think all of you have seen before, one showing the detail of the galley, side view of the engine room and the gas tank position, detail of the fittings from the gas tank to the pump, and auxiliary [636] engine, further details on the pump, push board arrangement, and the diagram of the engine room with the positioning of the main engine, the pumps and the gas tank.

Mr. Vartan: No objection.

The Court: These were made by the surveyor?

Mr. Silvers: Captain Hanson.

The Court: And when were they made, in the course of a survey or were they made after the accident?

Mr. Silvers: They were made during a deposition taken of Captain Hanson by Mr. Nave.

The Court: And made from his recollection?

Mr. Silvers: That is correct, sir.

The Court: After the accident occurred?

Mr. Nave: That's right, your Honor.

Mr. Silvers: Each of them is dated 11-28-55.

The Court: They will be received in evidence, and by consent, being sketches showing in a general way the layout of the various equipment and appliances aboard the Santa Lucia.

The Clerk: Respondent Cardinale's Exhibit S introduced and filed into evidence.

The Court: It consists of how many separate sketches, so we will have it on the record?



The Clerk: Six, your Honor.

(Six sketches re layout of Santa Lucia received in evidence and marked Respondent Cardinale's Exhibit S.) [637]

Mr. Nave: I will offer into evidence at this time, if the Court please, the inspection report made by the marine surveyors Genereaux and Hanson dated May 6, 1952.

The Clerk: Respondent Union Oil Company's Exhibit T introduced and filed into evidence.

(Inspection report dated May 6, 1952, received in evidence and marked Respondent Union Oil Company's Exhibit T.)

Mr. Nave: The second inspection report made by the marine surveyors Genereaux and Hanson dated September 14, 1953.

The Clerk: Respondent Union Oil Company's Exhibit U introduced and filed into evidence.

(Inspection report dated September 14, 1953, received in evidence and marked Respondent Union Oil Company's Exhibit U.)

Mr. Nave: And the third inspection report or the report of survey made by the marine surveyors, Genereaux and Hanson, of the fishing vessel Santa Lucia on September 10, 1954.

The Clerk: Respondent Union Oil Company Exhibit V introduced and filed into evidence.

(Inspection report dated September 10, 1954, received in evidence and marked Respondent Union Oil Company's Exhibit V.) [638]



GEORGE WASHBURN

a witness called by and on behalf of Respondent Union Oil Company, being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

The Clerk: Please state your name to the Court, sir.

The Witness: George Washburn.

Direct Examination

By Mr. Nave:

Q. Mr. Washburn, where do you live, sir?

A. In Corte Madera.

Q. What is your profession or occupation?

A. I am senior analyst for the Standard Oil Company of California.

Q. And how long have you worked for the Standard Oil Company?      A. 23 years.

Q. What positions have you held while working for the Standard Oil Company?

A. I have been an ordinary seaman, a ship's officer, and a safety engineer.

Q. What period of time were you a safety engineer for Standard Oil Company?

A. For 15 years and nine months.

Q. Mr. Washburn, what is your educational background?

A. I had two years at the University of California. [639]

Q. During the period of time that you have been employed by the Standard Oil Company of Cali-

(Testimony of George Washburn.)

fornia, have you had occasion to investigate fires and explosions aboard ships and around marine installations?      A. Yes, sir.

Q. Are you acquainted by experience with the general behavior of gasoline and petroleum products?      A. I am.

Q. Now, Mr. Washburn, before coming into court, you had had an opportunity to examine the marine survey inspection report which was made by Captain Hanson of the fishing vessel Santa Lucia, one in September of 1953 and another one on September 10, 1954, have you not, sir?      A. I did.

The Court: I was just observing—if I could interrupt a moment——

Mr. Nave: Certainly you may.

The Court: These sketches, Respondent's Exhibit S, do I understand—may I ask this witness a few questions?

You are familiar with ship construction, are you?

The Witness: Yes.

The Court: You looked at these sketches?

The Witness: No; I haven't.

The Court: Would you look at them for a few moments and I would like to get your interpretation of them to see [640] whether I interpret them correctly?

(Witness examining.)

The Court: Go ahead and take your time on it. I hope you don't mind me doing this?

Mr. Nave: No; it's quite all right.

(Testimony of George Washburn.)

The Court: It might interrupt your course of examination, but I would like to make sure that I interpret these sketches correctly.

Mr. Nave: It's perfectly all right, your Honor.

The Court: Because I regard this as a very important part of the case.

(To the witness): As you are looking at the sketches would you pay particular attention to the gas tank, the location of the gas tank, and the piping leading from the gas tank, and where those gas feeds lead to from the gas tank?

(Witness examining.)

The Witness: Yes, sir.

The Court: When you are finished, let me know. I want to ask you a few questions.

The Witness: All right. I think I am finished with them. They leave something to be desired in the way of ship drawings, but they do give us a general idea.

The Court: Where would you say the location of the gas tank is shown to have been on this ship as revealed by those drawings? [641]

The Witness: It is shown to be in the engine room up in the overhead.

The Court: What do you mean by "in the overhead"?

The Witness: Well, it is made fast to the ceiling.

The Court: And where would you say it was with reference to the deck of the galley?

The Witness: Well, let me study these a bit. It's

(Testimony of George Washburn.)

fastened to the overhead, which is the deck—that is a part of the galley deck. It is not directly under the galley but it is the same deck level that runs through forming the deck of the galley and the deck of the crew's quarters.

The Court: All right. How far would you say this gas tank was located from the forward bulk-head of the galley?

The Witness: Well, there is no scale shown on here but, just as a guess, I would say it is probably a foot or so.

The Court: Are there pipes leading from this gas tank?

The Witness: Yes, sir.

The Court: And how many pipes do you find leading from the gas tank?

The Witness: Two.

The Court: Where do they go to and what purpose do they serve?

The Witness: One feed line runs to the auxiliary generator and then that feed line continues to a pump called a [642] Wisconsin pump. And there is a second line that comes off the gas tank which ends in a valve. And that is a very poor installation, if that is what it actually shows.

The Court: Now, just what do you mean, that that is a very poor installation?

The Witness: Well, the Coast Guard have got requirements that state that you can't have any means of drawing off gasoline from a tank down in the engine room because it leads to very poor prac-



(Testimony of George Washburn.)

tices, such as if a crew member wants, say, gasoline to wash out a brush, why, they go down and open up this valve and draw it out.

The Court: It might also lead to leakage?

The Witness: It would, it could.

The Court: It could?

The Witness: Yes.

The Court: And you would say that that was very poor seamanship?

The Witness: Very poor construction.

The Court: Poor construction?

The Witness: Yes.

The Court: Can you give me any description from those drawings, Respondent's Exhibit S, as to the type of piping which led from this gas tank?

The Witness: Well, it's copper piping and it's quarter-inch O.D. and five-thirty seconds. [643]

The Court: What do you mean by quarter-inch O.D.?

The Witness: Quarter-inch outside diameter.

The Court: Outside diameter?

The Witness: Yes, sir.

The Court: That is copper piping, quarter-inch O.D., and that goes where?

The Witness: That runs to the auxiliary generator and to the Wisconsin pump.

The Court: Does it show any intermediate valves between the gas tank and the auxiliary generator?

The Witness: Yes, sir. There is a—what I would call a foot valve where the line leaves the tank and



(Testimony of George Washburn.)

there is a valve at the auxiliary generator and one at the pump.

The Court: So that altogether on this tank then you find four valves?

The Witness: Yes, sir.

The Court: One which would be called a drain valve, I take it?

The Witness: That is right.

The Court: And that does not connect then to anything else, that is simply a drain valve?

The Witness: Not as shown here, yes, sir.

The Court: And then the other is a valve on the piping which runs from the tank to the auxiliary generator and the auxiliary—on the Wisconsin pump—— [644]

The Witness: Yes, sir.

The Court: That's up—is that located near the tank?

The Witness: That is quite close to the tank.

The Court: And then there is another valve where the piping comes into the auxiliary generator?

The Witness: That is right.

The Court: And another valve where it comes into this Wisconsin pump, is that correct?

The Witness: Correct, sir.

The Court: Can you tell me just what type of engine that auxiliary generator has?

The Witness: No; I can't. All I can say it's a gasoline engine.

The Court: You can't tell how it is started?

(Testimony of George Washburn.)

The Witness: No; I can't.

The Court: Whether it has an electric starter or has to be cranked?

The Witness: No.

The Court: Can you give me any information as to the type of auxiliary pump engine, that Wisconsin pump?

The Witness: Once again, all I can say from this evidence here is that it was a gasoline engine pump.

The Court: But how it started, you don't know?

The Witness: No, sir. [645]

The Court: Whether it had to be hand cranked or had an electric starter, you don't know?

The Witness: I don't know.

The Court: Will you tell me what purpose the auxiliary generator serves or served aboard this ship, if you can, from these sketches?

The Witness: I can't tell from these sketches, but from general knowledge, why, I would say they could use it to charge their batteries. I note they have, from one of the other reports, they had 120-volt system battery system.

The Court: Do those sketches show the location of the storage batteries?

The Witness: As far as I can tell, they don't.

The Court: Now, do those sketches show the Diesel motor that powered this craft?

The Witness: Yes, sir.

The Court: Can you tell from those sketches something about the type or nature of that Diesel motor?

(Testimony of George Washburn.)

The Witness: No; I can't.

The Court: Are you familiar with the Diesel motors which are in fishing sloops of this type?

The Witness: I would say that the only experience I have had with Diesel motors has been with some of the Diesel launches that we operate. Now, generally speaking, they are more or less the [646] same.

The Court: How are they started after they have been turned off?

The Witness: They have different types of starting mechanism on them. Sometimes they start by air, and sometimes they have got what they call hydrostatic starters on them, which they work up a pressure by hydrostatic means, and sometimes they are started by electricity, just like an automobile.

The Court: And what gives the spark, a spark-plug?

The Witness: No. The Diesel engine is made to rotate by an electric starter, motor——

The Court: Yes.

The Witness: And the compression in the cylinders provides the ignition.

The Court: The compression in the cylinders?

The Witness: Yes, sir.

The Court: So that you don't need any flame or pilot flame going on a Diesel engine aboard a ship?

The Witness: No, sir.

The Court: Could you give me some idea as to about how many storage batteries you would find

(Testimony of George Washburn.)

in a fishing sloop of this type, or would expect to find; how big they would be?

The Witness: I have never seen a battery installation on a fishing sloop of that sort, and I would expect to find, if it is a 120-volt system used for starting the engine, [647] a very considerable number of them.

The Court: Are you familiar with the characteristics of storage batteries?

The Witness: To some extent, yes, sir.

The Court: You say that you seldom—did I understand you to say that you seldom have seen a storage battery system on a fishing sloop of this kind?

The Witness: I don't believe I said that.

The Court: I might have misunderstood you. That's the reason I asked you again. What did you say with reference to that?

The Witness: Well, I am not familiar with the actual physical details of a fishing vessel.

The Court: I see.

The Witness: Except as it is related to equipment in our own vessels, our own boats.

The Court: Do you know whether or not those storage batteries give off a gas, are you familiar with that?

The Witness: Yes, sir. When they are charged, why, they will give off hydrogen gas.

The Court: Do you know what effect, if any, a combination of that gas, which is thrown off by batteries, with gasoline vapor, might have?



(Testimony of George Washburn.)

The Witness: Well, hydrogen gas is explosive in itself and it would have no chemical relation to the gasoline [648] vapors.

The Court: All right.

Excuse me for having taken this witness away from you, but I wanted to get his explanation of these sketches, which I thought I understood but I wanted to get his expert confirmation.

You would say that the installation of this gas tank in that location was not in accordance with good marine architecture or seaworthy standards of construction?

The Witness: I would say that the specific thing of having a valve, a drain valve in the bottom of the tank is a violation of good practice. There is no reason a tank can't be installed ever in the overhead like that, if it is done in workmanlike manner and properly maintained.

The Court: Would you say that it should have some protection around it, some covering around it?

The Witness: No, sir. That could be undesirable, to cover it up, because when a thing gets covered up, it is out of sight, out of mind. It is far better to have it out in the open where you can see what is going on.

The Court: All right.

Q. (By Mr. Nave): Now, Mr. Washburn, I call your attention to one of the sketches made by Captain Hanson, marked Respondent's Exhibit S, and it shows a drawing of a gasoline tank, the dimensions are [649] given as 48 inches long, 24 inches



(Testimony of George Washburn.)

wide, and 6 to 8 inches deep. Now, the capacity of such a tank, Mr. Washburn, is in the area of approximately 30 gallons of gasoline, is it not?

A. Well, that's subject to calculation. I can't actually say one way or the other.

Q. Well, assuming for the purposes of this discussion, the question I am asking you, the capacity of that gasoline tank is approximately 30 gallons and assume, Mr. Washburn, that as shown on the sketch, that there is a fill pipe running from the top of the gasoline tank up to the top of the deck that is shown on one of these other sketches better and that the pipe extends above the deck and that there is an opening on the upper portion of the deck for the purpose of insertion of a nozzle to put gasoline in that tank——

Mr. Silvers: Did you say the pipe extends above the deck?

Mr. Nave: To the surface of the deck above the deck—and assuming that such a tank had a capacity of 30 gallons total, and assuming that any quantity of gasoline in excess of 30 gallons were put into that tank, what would happen when the capacity of the tank had been reached?

A. Well, normally run out on deck.

The Court: Come up through the intake?

The Witness: Yes.

The Court: Up? [650]

The Witness: The same as in the matter of filling an automobile tank too full.

The Court: That is, assuming that the tank was

(Testimony of George Washburn.)

intact and didn't have a hole in it and that the pet cock beneath was shut?

The Witness: That is right.

The Court: And that the valves leading to the engine were shut?

The Witness: Right, sir.

Q. (By Mr. Nave): Now, Mr. Washburn, I want you to assume certain facts in connection with the questions I am going to ask you. Assume that Mr. Hanson of the firm of Genereaux and Hanson, marine surveyors, had made a survey for insurance purposes of the fishing boat Santa Lucia on the 3rd day of September, 1954, which is approximately three weeks before the explosion and fire which occurred at Avila and which is the subject matter of this litigation.

Now, assuming that in this survey, which you have examined before, that the inspection made by Captain Hanson reveals the following conditions to be present on the fishing boat at that time:

General condition of vessel shows very poor maintenance and upkeep. Bilges filthy, dirty, black oil and grease, with considerable fuel oil on surface of bilge water. [651] Housekeeping very bad.

Tools and spare parts are all badly rusted, inoperative, and scattered in disarray throughout the engine room.

Cabin, galley and wheelhouse are all disorderly and dirty with filthy clothes and fishing gear scattered about.

Several loose and bad order light fixtures in

(Testimony of George Washburn.)

main house, especially in galley. Also in the power wire and switch to galley stove burner badly oil soaked and in very—it says good condition, but you may assume that is “very poor condition” for this purpose.

Main engine operated and tested for a period of approximately one hour. Operating pressures and temperatures normal from what gauges could be read. Several gauges are broken and inoperative.

And that these recommendations were made:

Install bilge electrical alarm. Weigh and fill all CO<sup>2</sup> fire extinguisher equipment, last filled 1950.

Clean the entire engine room and bilge area. Repair or renew if necessary all electrical outlets and wiring now hanging adrift.

Complete overhaul pyrometer, wiring and thermocouples.

Renew union on four-inch sea suction line [652] port side. Paper thin. Disintegrated when tapped with hammer during testing.

And assuming further that on the date of an explosion which blew up this fishing vessel, that immediately prior to the explosion and at the time of the explosion there was a fire or a flame on the galley stove located in the galley of the vessel which was described by the witness who was the cook of the fishing vessel as being on from one to a quarter of an inch in extent as to flame; and assuming those factors, and assume that gasoline was dumped into the engine room, into the area of the bilges of the Santa Lucia by a failure of the gasoline tank or the

(Testimony of George Washburn.)

valves connected thereto, I will ask you if you have an opinion as to the possible sources of ignition of gasoline vapors that would accumulate in the bilges of that vessel.

Mr. Silvers: We will object to the question, your Honor, on the ground that it assumes facts not in evidence.

The Court: We will take it for what weight—which I will give to it, I don't know. Objection overruled.

Q. (By Mr. Nave): Do you have an opinion?

A. I would say that by listing some of the possible sources of ignition which you might find in a fishing vessel at a time like that——

The Court: His answer is going to be [653] entirely speculative and I am the man to draw the inferences from the circumstances which are presented by the proof, not this witness.

Mr. Nave: I appreciate that, your Honor.

The Court: But if you want his answer on the record, put it on the record.

Mr. Nave: Thank you, your Honor.

Q. (By Mr. Nave): Go ahead, Mr. Washburn.

A. In investigating an explosion, why—could I elaborate a bit?

The Court: You can elaborate as much as you want because I am not going to pay a bit of attention to this testimony. I am simply letting it be put on the record so that there might be a complete record in the event of an appeal; if I make an



(Testimony of George Washburn.)

erroneous decision, it won't be necessary to have another trial.

The Witness: I see.

Investigating an explosion, why, you investigate three factors that make up a fire or an explosion: the source of air, the source of ignition, and the source of fuel. Well, in many cases, why, the source of air can be dispensed with. It is perfectly obvious.

Then you approach the next two and whichever seems to be obvious—whichever seems to be easiest to [654] investigate, why, you investigate that first. In this case it seems fairly obvious to me where the fuel came from. It's gas that came out of the tank.

Then we go to the source of ignition and that is not so obvious.

Now, here are the things that I would look for in an explosion on the fishing vessel under the conditions described:

First, I would want to know if there had been any smoking going on.

Secondly, if there are any open flames, such as this flame you described in the galley stove.

Thirdly, any automatic machinery, electrical machinery, that might start up and produce a spark. Again, any electric switches that might have been thrown, either manually or automatically that produce a spark.

Then lastly, I would examine the entire electrical setup for loose wiring, the batteries, for the possibility that something might have fallen across the terminals and produced sparking.



(Testimony of George Washburn.)

The Court: You look for one thing more, Professor, don't you? You look to see whether there is any condition which would create a friction which might give rise to static electricity and thereby produce a spark?

The Witness: It is possible. [655]

The Court: All right.

The Witness: Another thing I would look at would be the possibility of spontaneous combustion. In fact, I would put that up fairly high on the list.

And also the possibility of any smoldering rags that might have fallen on hot machinery.

Q. (By Mr. Nave): Mr. Washburn, are you familiar with the gasoline hose such as is represented here by Respondent's Exhibit J used in the marine service station terminals throughout the industry? A. Yes, sir.

Q. And the hose section that I am handing you here, I will also ask you whether or not that is standard hose that is used in the marine gasoline service stations throughout the industry?

A. That appears to be, yes.

Q. Now, that wire, the wires that you will see in the hose itself, are those wires in there for the purpose of bonding as well as insulating the hose?

A. That is what they are there for. They don't serve any useful purpose, but——

Q. Now, the material that the hose nozzle is made of appears to be some type of brass.

A. Brass or bronze.

Q. I will ask you if that is a standard type of

(Testimony of George Washburn.)

material and design that is used in the marine service station installations [656] throughout the industry?      A. It is.

Mr. Nave: I believe that's all the questions that I have, Mr. Washburn.

The Court: We will adjourn to half past one.

(Whereupon, a recess was taken until 1:30 o'clock p.m. this date.) [657]

Afternoon Session—1:30 P.M.

GEORGE WASHBURNE

resumed the stand, being previously sworn, testified further as follows:

Cross-Examination

By Mr. Silvers:

Q. Mr. Washburne, you told us that your present position is that of senior analyst with the Standard Oil, is that correct?      A. That is correct.

Q. How long have you held that position?

A. Since April 1st of this year.

Q. What is a senior analyst?

A. It is a position in an organization known as Operations Control, and we are creating or setting standards of sanitation, fire fighting, safety and many other matters, and seeing that they are applied on an equitable basis throughout our entire fleet. We now operate, in addition to our fleet on this Coast, a fleet back East—two fleets back East.

(Testimony of George Washburn.)

Q. Your experience as a seaman in the past has been on petroleum tankers, is that correct?

A. That is right. I was also with freighters for a short period of time.

Q. Petroleum tankers, a short time on freighters, and you worked up to a position of second mate, is that correct? [658]

A. That is right.

Q. Now, you haven't had any experience on fishing boats of the type we are talking about, is that right?

A. That is right.

Q. You have never been inside the engine room of the Santa Lucia, is that correct?

A. That is right.

Q. Have you ever been inside the engine room of a purse seiner of the type of the Santa Lucia?

A. No, sir.

Q. You have had no operational experience yourself with marine engines, is that right?

A. I am a yacht man. I have a 23-foot cabin cruiser and I am quite familiar with the engine of that boat.

Q. Aside from your 23-foot boat, you haven't had any experience with the operation of marine engines, is that correct?

A. Well, I have been not actually operating with them, no, if that is what you mean.

Q. Mr. Washburne, did I understand your testimony correctly that you felt it was not—withdraw that.

You have seen, have you not, in your experience as you have described it, auxiliary gasoline tanks

(Testimony of George Washburn.)

of the type that has been described to you and which you saw sketched on this diagram attached to the overhead of an engine, isn't that [659] correct?

A. That is right.

Q. And I think you told the Court that that in itself isn't in any way a violation of good marine practice, isn't that correct? A. That is correct.

Q. As a matter of fact, the only point that you felt was improper practice, if I remember correctly, was the existence of one valve, is that correct?

A. There's that, and there's another thing, too: It is better practice to have your lines leading from the tank come out at the top of the tank and extend down into the tank inside rather than come out of the bottom. The purpose of that is if your align breaks, why, the contents of the tank will not run out.

Q. Yes?

A. Although in some circumstances it still can.

Q. Even though it is above the tank?

A. That is right.

Q. You don't know whether this type of gas tank installation is standard or not on purse seiners, do you? A. No.

Q. If I remember correctly, the valve that you question as being possibly a violation of good practice was this valve that I am pointing to now, which on the diagram, Respondent's [660] Exhibit S, on the third sheet of this collective group of diagrams, Respondent's Exhibit S, marked at the bottom



(Testimony of George Washburn.)

"11/28/55," if I understood you correctly, it is this valve on the left bottom of the tank as we are looking at the diagram, that you question.

A. That is right.

The Court: That is really a pet cock, isn't it?

Mr. Silvers: I was going to ask the witness that.

Q. (By Mr. Silvers): Do you know what that valve actually was and the purpose it served?

A. I don't, no.

Q. You don't know anything at all about the valve?

A. No.

Q. Do you know of what it was made?

A. No.

Q. Do you know how much it extended below the lower part of the gas tank?

A. The only thing I know from that drawing is that it is marked as a valve.

Q. Right. And from that and that alone you concluded it is bad practice to have it there, is that it?

A. Right, sir.

Q. Did you ever hear of a bleeder valve, Mr. Washburne?

A. Yes. [661]

Q. What is it?

A. It is for draining the contents of the tank out of the tank.

Q. Water condenses and forms on the inside of a fuel tank, does it not?

A. It can, yes.

Q. And water condenses and can form on the inside of the auxiliary gas tank of the type we are talking about, right?

A. There could be water there.



(Testimony of George Washburn.)

Q. And it would lead to a general, a very undesirable condition so far as the operation of ship's engines which that particular tank might fuel if the water was simply left in the tank, isn't that correct?

A. Yes.

Q. It is undesirable to maintain a mixture of water and gasoline when gas is the fuel for a particular engine, isn't that right?

A. Well, your water wouldn't stay in the tank, it would run down into the——

The Court (Interposing): They wouldn't mix, would they?

Mr. Silvers: Well, they sit on top of each other, you're correct, Judge. They don't mix literally.

Q. (By Mr. Silvers): But their presence together—let's put it that way [662] —is undesirable and you would want to remove the water, isn't that right?

A. Well, it would remove itself. It would run with the gasoline down into your fuel pump, and there is a little glass jar down there, and from time to time you take that off and dump the water out and throw it out.

Q. Well, did you ever hear of a bleeder valve that performed that same purpose that is used to remove condensed water inside a gas tank?

A. Well, I can only repeat that it is very poor practice to have such a valve installed, and it is distinctly prohibited by NFPA regulations and the Coast Guard regulations.

(Testimony of George Washburn.)

Q. What particular regulation are you referring to that prohibits this kind of valve installation?

A. I have got one in my pocket here. These are the fire protection standards for motor craft put out by NSTA.

Q. May I see what you are referring to, Mr. Washburne? Are you referring to this section which you or someone has marked in the margin?

A. No. If you want the precise thing there, we will have to go through here and find it.

Q. I would like you to find me the regulation which prohibits the use of a bleeder valve——

A. (Interposing): Okay.

Q. ——where it was on this particular gas [663] tank. A. You will find it on page 302-11.

Q. Would you show it to me?

The Court: Read what it says there.

The Witness: "Outlet for drawing gasoline below deck for any purpose shall be prohibited."

Q. (By Mr. Silvers): Does it say anything about outlet for drawing water below deck shall be prohibited? A. No.

Q. Do you know whether or not this particular valve was used to draw gasoline off below deck?

A. It is connected with the gas tank, so I assume it's going to draw out the contents of the tank.

Q. And it is on that assumption that you think this valve would draw out the contents of the tank that you concluded it was poor practice, right?

A. That's right.

Q. And that is the only basis?

(Testimony of George Washburn.)

The Court: What is the Coast Guard regulation?

The Witness: I don't have that here. I would have to dig that out.

Q. (By Mr. Silvers): Let's see that book again, please. This is not any Coast Guard regulations you are referring to? A. No. [664]

Mr. Silvers: May I have this marked for identification, your Honor?

(Regulation referred to above marked Respondent's Exhibit W for identification.)

The Court: You had better put on the record what it is now.

Mr. Silvers: Yes, your Honor. For the record, the pamphlet that I have just referred to is entitled "Fire Protection Standards for Motor Craft, National Fire Protection Association.

Q. (By Mr. Silvers): And the page, I think, you have referred to was——

A. In the upper right-hand corner, isn't it?

Q. Page number 302—is this it, Mr. Washburne?

A. No. Pardon me a moment. It is 302-11.

Q. 302-11. Subparagraph 321-C, is that correct?

A. That is right.

Q. You don't hold yourself out as a marine surveyor, of course, in any way, do you?

A. No, sir.

Q. Did I understand you correctly, Mr. Washburne, that the wires in the hose in Respondent

(Testimony of George Washburn.)

Union Oil's Exhibit F were theoretically designed to serve the purpose of a bonding agent, but that practically they don't serve such a function?

A. They serve such a function, but they are actually [665] unnecessary.

Q. Why is that?

A: That is because this nozzle is designed in such a manner that it's in contact with the tank, and any static that might be created by the flow of gas is grounded to the tank.

Q. And when the nozzle is removed from contact with the tank, would there be any bonding agent present then?

A. Well, it's no longer necessary. You have stopped the flow of gasoline which is creating the static, and then you remove your nozzle and you no longer have the same condition.

Q. So your position is that this wire does not really serve any function in this type of operation?

A. That's right.

Mr. Silvers: We have no further questions of this witness.

The Court: All right, sir, thank you very much. Witness excused.

(Witness excused.)

Mr. Nave: Mr. Byrne.

JOSEPH BYRNE

a witness called by and on behalf of the Respondents, being first duly sworn to tell the truth, the whole truth and nothing but the truth, testified as follows:

The Clerk: Will you please state your name to the Court? [666]

The Witness: Joseph Byrne—B-y-r-n-e.

Direct Examination

By Mr. Nave:

Q. Mr. Byrne, by whom are you employed?

A. By the Union Oil Company of California.

Q. How long have you been employed by them?

A. Approximately four years.

Q. What is your position with them?

A. I am supervisor of the process department in the Oleum Refinery.

Q. Will you state your chemical education and scientific education?

A. Degree of Bachelor of Arts from Stanford University in physical chemistry, or, rather—correction—physical sciences. Master of Science degree from M.I.T. in chemical engineering practice. Doctor of Science degree from M.I.T. in chemical engineering.

Q. In connection with your education and your training and your work, are you familiar with the behavior of petroleum products? A. Yes, sir.

Q. Doctor Byrne, assuming that you have a gasoline tank that's approximate dimensions are four



(Testimony of Joseph Byrne.)

feet by two feet by six inches; it is on a fishing boat, under the deck of the boat with the filling hole up to the deck level; and assuming [667] that the gasoline tank in question is suspended by hangers underneath the upper deck as indicated in the sketch prepared by Captain Hanson, who is a marine surveyor, and introduced in evidence as Respondent's Exhibit S—you may refer to that sketch.

Now, assuming that gasoline was introduced into the spout of the fill neck of that tank by a hose, a level-type, spring-type hose similar to the one I have in my hand, which is marked Respondent's Exhibit J.

I will ask you first, Doctor: What would happen, assuming that the gasoline tank was normal, when any amount in excess of its capacity had been put into the filling tank.

A. We would find the gasoline burbling back on top of the deck, spilling on the deck.

Q. Now, assuming that the gasoline tank in question would hold 30 gallons of gasoline, can you tell me, sir, how much 30 gallons of gasoline would weigh?

The Court: Well, why don't we ask him this? Do you mind if I do it? I was just about to ask him this question.

Mr. Nave: Go right ahead, your Honor.

The Court: Taking these figures shown on the second page of Exhibit S to be so, and that the size of the tank—got a pencil, Doctor?

The Witness: Yes. [668]

(Testimony of Joseph Byrne.)

The Court: —was 48 inches long, 24 inches wide and—I don't know what this is—six feet eight inches, but it can't be that.

Mr. Nave: It is six inches and eight inches.

The Court: Well, let's put seven inches.

What is the cubic content of such a tank, sir?

The Witness: Seven inches deep for this purpose?

The Court: Seven inches deep. We will take seven inches. That is the mean between six and eight.

The Witness: That would be 35 gallons capacity.

The Court: 35 gallons capacity. Now, tell me, what is the cubic capacity of one gallon?

The Witness: In cubic feet, sir?

The Court: Yes, cubic feet or cubic inches.

The Witness: 231 cubic inches for one gallon.

The Court: 231 cubic inches equals one gallon? Is that right?

The Witness: Right.

The Court: And you estimate a tank of these dimensions, 48 inches by 24 inches by seven inches, is 35 gallons?

The Witness: Yes, sir.

The Court: Now, would you compute it on this basis: 48 inches times 6 inches times 24 inches and tell me what would be the capacity in gallons of such a tank? [669]

The Witness: 48 inches by—

The Court: 48 by 6 by 24.

(Testimony of Joseph Byrne.)

The Witness: That would be a 30-gallon tank, sir.

The Court: That would be a 30-gallon.

Now, so that we can have it on the other end of the spectrum, 28 by 48 by 8.

The Witness: That is 40 gallons, sir.

The Court: 40 gallons? All right.

Q. (By Mr. Nave): Doctor Byrne, assuming first, if you will, that a gasoline tank is filled with 30 gallons of gasoline, will you please tell the Court what the weight of the gasoline itself is in the 30-gallon capacity tank?

A. About 175 pounds of gasoline.

Q. And if you will be good enough to make the same computation on 35 gallons, the weight?

A. 205 pounds.

Q. And 40 gallons, what would it weigh?

A. 235 pounds, roughly.

The Court: Is that a circular slide rule you have there?

The Witness: Yes.

The Court: I never saw one like that. Have they been out long?

The Witness: Yes, sir, I bought this one during [670] the war when I couldn't buy the standard kind.

Q. (By Mr. Nave): Now, Doctor, assuming that you are filling a gasoline tank of from 30 to 40 gallon capacity, in that range, depending on the difference of whether it was six inches deep down to eight inches deep; and assuming that you were

(Testimony of Joseph Byrne.)

introducing gasoline into the opening of the gasoline tank that we have discussed by the means of a gravity type hose connected to a gasoline tank upon the dock.

Assuming that that was from 9 to 12 feet above the deck of the ship where the fuel nozzle had been inserted into the opening of the tank; what would be the amount of pressure that would be generated, shall we say, when you are introducing fuel from this fuel line into a tank with an opening in a nozzle of five-eighths inch in diameter? What would be the original impact or pounds that would be introduced into a tank, assuming the tank were empty at that time?

A. It would depend, sir, on the rate at which the fuel was entering the tank.

Q. Assuming that the fuel was entering the tank at approximately five gallons per minute.

The Court: I don't know that there is any such basis for such assumption.

Mr. Silvers: I am going to object on the specific grounds that this assumes something not in evidence. [671]

The Court: That would be almost like a Niagara Falls, you know; and I don't know that the Professor can give us his opinion unless he knows how much is in the tank from which the supply is being drawn, and he knows the cubic content of that tank so that he can measure the weight behind the flow.

Is that correct, Doctor?

The Witness: No, sir. I believe the conditions

(Testimony of Joseph Byrne.)

existing upstream of that valve would not enter into my interpretation of the question as I understood it, but would depend on the rate and volume coming out of the end of this nozzle impacting against the bottom of the tank.

In this case we are assuming the tank on board the ship is empty.

Mr. Nave: Yes.

Mr. Silvers: I will enter an objection, your Honor, on the ground that——

The Court (Interposing): Well, it is entirely hypothetical. It may be illuminating, I don't know. I am not going to give very much weight to this, but figure it out and tell us about it.

The Witness: There are a number of assumptions that go into a calculation of this kind.

The Court: Tell us what those assumptions are. First, tell us whether or not those assumptions have variables. [672]

The Witness: It depends on the area at the bottom of the tank on which this gasoline is impinging. If I could draw an analogy, if I have a pointed object that I hit against with this paper, I would have a great deal of stress. If it's a blunt object, the stress is spread out and no great stress is imposed on the paper.

In this case, for this rough kind of assumption, I would assume that the gasoline is hitting the bottom of the tank in a diameter equivalent to the filling nozzle of the tank.

The Court: That is quite a large assumption to



(Testimony of Joseph Byrne.)

use, because when water leaves the confinement of a nozzle, the natural force of nature is to spread it out.

The Witness: Yes, sir, it has a tendency to spread out. The farther it spreads out, the less the pressure is.

The Court: And the greater the fall, the greater the tendency to disperse.

The Witness: Yes, that's correct, your Honor.

The Court: So you are making quite a rash assumption when you assume the stream remains constant.

The Witness: Yes, sir.

The Court: It is an assumption opposed to physical facts, physical laws.

The Witness: There is a confining influence of the neck of the—— [673]

The Court (Interposing): I say that is an assumption which is opposed to the laws of nature, isn't it?

Mr. Nave: Well, what I was about——

The Court: Wait a minute. We might as well get this.

Mr. Nave: Well, what I was after——

(Simultaneous colloquy between Court and counsel.)

Mr. Nave: Well, perhaps my question was not artfully stated, your Honor. I think the fault is on my part in the way I stated it.

The Court: All right. The Court may also fail

(Testimony of Joseph Byrne.)

to follow the witness in his desire to be an accommodating witness.

Q. (By Mr. Nave): What I am trying to ascertain from you, if you can give me the answer, I am trying to find out what would be the pressure that would come through the operation of a 5-inch nozzle to go into a tank such as we have described here, in a gasoline installation, gravity flow, and assuming that the gasoline would go into that tank and not exceeding five pounds—(one word inaudible to the reporter).

Mr. Silvers: Same objection.

The Court: Overruled.

The Witness: In this sort of case, making a rash assumption that represents the extreme limits of the boundary that physical facts will allow, on the order of one pound per [674] square inch.

Q. (By Mr. Nave): That would be the maximum, perhaps?

A. As physical laws take over and allow the spreading to occur, the pressure will be less.

Q. Thank you very much. Now, assuming, Doctor, going one step further, assuming your tank is filled up to the outlet and that additional gasoline is introduced into the neck of the fill pipe; and assuming the same rate of not to exceed five gallons per minute and the same nozzle, the same conditions there as the tank above, could you tell me the maximum additional pressure that is being asserted in the fill when the fuel has come to the top of the fill neck?

(Testimony of Joseph Byrne.)

Mr. Silvers: My previous objection, your Honor.

The Court: Overruled.

The Witness: That question is not clear to me, sir, whether you want to consider the gasoline still flowing, or whether you want to consider the gasoline stationary.

Q. (By Mr. Nave): Consider the gasoline is still flowing and that you have reached a point where your tank is filled and you are still introducing gasoline by your nozzle into the fill pipe.

A. Under the worst of the assumptions I could make, we would again have a pressure of about one pound per square inch. [675]

Q. That would be maximum pressure?

A. Yes, sir.

Q. Now, assuming, Doctor Byrne, that a gasoline tank ruptured or failed when its capacity was from 30 to 40 gallons, under the fueling conditions that I have stated in my previous question, by use of this type of hose nozzle and this type of neck with a gravity feed tank, making this assumption that such tank did rupture or fail, could you state, if you have an opinion as to what part of that tank would be inclined to rupture or fail and the reasons for it?

Mr. Silvers: Same objection.

The Court: I am most interested in hearing this answer. The objection will be overruled.

I would like to know how the Doctor can answer that unless he knows something about the relative differences in the sides and how the sides are put together, and the material with which it was made.

(Testimony of Joseph Byrne.)

Q. (By Mr. Nave): You may refer to this sketch, Doctor Byrne, as to the installation of the tank and the use of hangers.

The Witness: I don't believe there is——

The Court (Interposing): There is no description of the hanger in these sketches. There is no description of what this tank is made of, no description of the gauge of the tank, no description as to whether it is welded, whether there [676] are partitions inside that break up the space or not.

Mr. Nave: Well, the only thing I can do——

The Court (Interposing): Maybe the Doctor can answer the question.

Mr. Nave: Well I will assume for this question that the tank is made of galvanized metal, and I will assume that the tank is the standard gasoline tank of its size as to the thickness of the galvanized metal used.

The Court: I don't know that there is any standard of thickness gauge, particularly in recent years.

Mr. Nave: Well, then we will withdraw those questions until Captain Hanson has testified about them.

The Court: Well, if you have the information that you can give the witness, give it to him, or if he can answer it without that information, I would be interested in hearing it.

Can you answer that question, Doctor, that counsel propounded to you?

The Witness: Not without making a number of additional assumptions, your Honor.



(Testimony of Joseph Byrne.)

Q. (By Mr. Nave): Doctor, gasoline is—I don't think there is any question about it—is a volatile liquid. It will vaporize. Now, when gasoline is played into an area or allowed to escape in an area where there is air, it will make a vapor, that is true, isn't it? A. Yes, sir. [677]

Q. And that vapor would reach a certain percentage of saturation of gasoline fumes to air?

Mr. Silvers: I object to the question as leading and suggestive.

The Court: Well, it is almost common knowledge so far. We know that gasoline vaporizes.

Mr. Silvers: Not that part of it, but that concentration business he is making there.

The Court: All right, go ahead and finish your question.

Q. (By Mr. Nave): What I meant to ask you, Doctor, in order to save time, what range, what percentage of mixture of gasoline or gasoline vapors would form a flammable range of gasoline?

A. The rule of thumb that we use for petroleum work is one per cent at the lower flammable limits, seven per cent in the upper flammable limits.

Q. And is there a range between one per cent and seven per cent that would be considered as being severely explosive?

A. In the center of the range, on the order of three or four per cent, when the vapor is confined, would cause the greatest damage in case of ignition.

Q. Now, assuming, Doctor, that you have an



(Testimony of Joseph Byrne.)

engine room on a fishing boat and that the engine room is approximately 30 feet long, 20 feet wide and 8 inches high—— [678]

Mr. Vartan: You mean 8 feet high, don't you?

Mr. Nave: 8 feet high, thank you.

Q. (By Mr. Nave): 30 feet long, 20 feet wide and 8 feet high. And assuming that gasoline is introduced into that room and permitted to spill or fall on the floor of the engine room of the size that I have described; and assuming that you had a warm temperature inside the room of, assuming 70 degrees temperature in the engine room; and assuming that in that engine room there was equipment and apparatus that took up a part of the space so that actually you had an equivalent of 1,200 cubic feet of space that vapors could fill in and spread over.

I will ask you to state, if you will, please, the length of time it would take for these gasoline vapors to come to the concentrations in the flammable range of one to seven per cent.

Mr. Silvers: We will object to the question, your Honor, on the ground that it assumes something not in evidence, facts not in evidence; that it is remote and speculative; that it omits one, I think, obviously material factor and that is the nature of the ventilation that is present in the room.

The Court: I would like to see if the Doctor can answer that. I would like to see what advances modern science has made in the realm of speculation, and therefore the objection is overruled. [679]

The Witness: I am confused at this moment, sir,

(Testimony of Joseph Byrne.)

on the last part of the question. Let me have the question?

The Court: Can you tell the rate at which gasoline can evaporate unless you know the temperature at which it is exposed?

The Witness: I was given a temperature to assume but was not given the area over which it was spread or some of the other factors that would affect it.

Mr. Nave: All right, I will restate the question.

Q. (By Mr. Nave): Assuming you have an engine room of 20 feet by 30 feet by 8 feet; and assuming that the temperature in that engine room is around 70 degrees; and assuming that the part of that space that is not occupied by tanks, engines and other apparatus, or the free space is approximately 1,200 cubic feet; and assuming that the ventilation would consist of a hatchway from the top of the engine room of approximately two feet by two feet and a ventilator in the engine room of approximately 12 inches in diameter.

Now, can you give me a calculation based on that as to the behavior of formation of vapor in that area under those conditions?

Mr. Silvers: Renew our objection on the grounds previously stated.

The Court: Same ruling. Overruled. [680]

The Witness: To determine the rate at which the vapors would spread in a space like that is not a matter that I can put in calculation. In my judgment, it would be a matter of minutes for the vapors

(Testimony of Joseph Byrne.)

to go through that compartment. There is no equation of science that I can spell out.

Q. (By Mr. Nave): All right. From the standpoint of time, of minutes, can you give me an estimate of the length of time it would take for vapors to form a flammable range or combustible range?

A. That would depend, sir, on the amount of gasoline that had been introduced.

Q. Well, let's assume that 58 gallons of gas had been introduced into that area, could you tell me what would happen in the way of formation of vapors?

Mr. Silvers: We object to the question, your Honor, on the ground it assumes facts not in evidence.

The Court: Overruled.

The Witness: In a case like that, again there is no equation that tells us how long we will get into an explosive range, but in my judgment it would be a matter of a very few minutes until an explosive mixture was reached or arrived at.

Q. (By Mr. Nave): Now, gasoline that is introduced into an area such as we have described here, does it tend to rise or does it [681] tend to settle?

A. It tends to settle.

Q. And that is due to the fact that it is heavier than air, is that true?

A. Yes, the vapors are heavier than air.

Q. And assuming that you introduce one gallon of liquid fuel, what percentage of vapor would be produced under the conditions—no turbulence, or

(Testimony of Joseph Byrne.)

little turbulence, and around 70 degrees temperature?

A. The initial evaporation of the gasoline would be rapid until about something on the order of ten per cent of it had evaporated, and then the rest of the evaporation would become progressively slower. It would be a matter of hours for all of the gasoline to evaporate.

Q. Assuming an area in an engine room such as I have described of 1,200 cubic feet of free space, how much gasoline would have to be introduced in that area before you would have a combustible material of from one to seven per cent?

Mr. Silvers: We will still object to it, your Honor, on the ground that it is apparent there is no basis on which this witness can answer the question.

The Court: If he can't, I have enough faith in his integrity for him to so advise the Court. Overruled.

The Witness: Again on the basis of the initial ten per cent evaporation rapidity that we are concerned with, [682] we would need about four gallons of fuel introduced into that compartment to create a minimum flammable mixture.

Q. (By Mr. Nave): Now, assume, Doctor Byrne—first let me ask you, have you had any experience, made any study, of the toxic effect of gasoline fumes or vapor on people who are exposed to such fumes?

A. I have not made any direct study, sir, but knowing of such figures is part of my business.



(Testimony of Joseph Byrne.)

The Court: How is that material in this case?

Mr. Nave: This goes, your Honor, to the theory as to the vapor, and the theory that if there had been gasoline spilled on the deck, as to how it would manifest itself on the people who were in the area.

The Court: In the open area, unconfined area?

Go ahead, if you can answer it. I am interested. In the open air? It is quite common knowledge that fumes dissipate in the open air, particularly around the waterfront where there are currents of air. But go ahead. I am finding some of these answers most informative.

Q. (By Mr. Nave): Now, Doctor, assuming and making the assumption that gasoline had been spilled or liberated up in an area on the dock shown here in this photograph, Respondent's Exhibit B, and that a large quantity of gasoline was released or permitted to flow in that area; and assuming that a man is standing in [683] the immediate area where the gasoline in large quantities, anywhere from 30 to 60 gallons of gasoline, had been permitted to concentrate in the area, would such gasoline create a smell that would be discernible by a person by his own nose? A. Yes, sir.

The Court: Doesn't constant contact with such fumes dull the sensitivity of the olfactory nerves?

The Witness: Yes, sir, it does.

The Court: And one constantly around gasoline or gasoline products is not as sensitive to it under ordinary circumstances as one who is a stranger to



(Testimony of Joseph Byrne.)

those fumes? Would you say that that is the result of your experience?

The Witness: In my experience that is true, yes, sir.

The Court: In other words, you being around gasoline might not smell the fumes as quickly as I. I can only smell it when I am paying 37 cents a gallon and find it going out of the spout.

The Witness: I agree. I am even critical to that point, your Honor.

The Court: All right.

Q. (By Mr. Nave): Well, assuming a large quantity of gasoline were released in an area where a man was standing and there was a sufficient—it formed sufficient vapor where it could [684] explode with a flash, would that person be able to remain in that area in that vapor without becoming violently ill, having it affect his entire system?

A. The minimum flammable limitation we were using is one per cent, which is equivalent in toxicology to 10,000 parts per million. That is rated at a concentration where a few lungsful will cause severe symptoms, in some cases even unconsciousness, after a few lungsful at that concentration. If a man had been standing in it, even if his olfactory senses were completely dulled, he would have had other symptoms from it—dizziness, probably vomiting.

Mr. Nave: Thank you. You may examine.

Mr. Silvers: No questions.

Mr. Vartan: No questions.

The Court: Thank you. Witness excused.

(Witness excused.)

The Court: Any other witnesses?

Mr. Nave: No.

The Court: Respondent Union rests?

Mr. Nave: So far as testimony of any witnesses, your Honor, we do. There may be some exhibits offered. Not verbal testimony at this stage. We have introduced the witnesses that we indicated to your Honor.

Mr. Vartan: Mr. Silvers, can I interrupt?

Mr. Silvers: Certainly. [685]

Mr. Vartan: On the question of the value of the franc, Mr. Nave and Mr. Silvers have stipulated to 350 francs per dollar, just for the record.

The Court: That is on the claim of the deceased?

Mr. Vartan: Yes, your Honor.

The Court: And that is to be applied to the testimony taken on the commission of the widow?

Mr. Vartan: That is right.

Mr. Nave: Your Honor, in that respect I am in no position to dispute the computation, but I can't stipulate to it. I don't know myself.

The Court: But you will stipulate that if he called the exchange expert, that the exchange expert would testify at the time involved the Algerian franc was on an exchange rate of 350 to one American dollar?

Mr. Nave: That such a statement would be if such witness could be produced, your Honor.

Mr. Vartan: I don't want to mislead the Court,

your Honor. Mr. Belleci, whose sister-in-law is still living, the widow, he stated that that was the exchange at that time, because these boys are constantly sending money home. I don't want to mislead you that I have checked any expert.

The Court: You can get a quotation from any financial paper around that time and I will receive it, but I will take this stipulation. [686]

Mr. Vartan: Very well.

Mr. Silvers: Your Honor, at the outset we would like to place on the record the agreement and stipulation of counsel with regard to certain allegations of the libel in action No. 27364 brought by Idalene J. and Frances E. Cardinale.

The Court: That is the suit which you have filed on recovery of hull damage to your ship?

Mr. Silvers: That is correct.

The Court: You have filed that as a cross-libel against Union Oil?

Mr. Silvers: No, it was in a separate action.

The Court: A separate action against Union Oil?

Mr. Silvers: Against Union Oil, right.

The Court: All right.

Mr. Silvers: In that connection I would like the stipulation noted that at the time we are interested in, September 28, 1954, the date of this fire and explosion, Libelant Idalene J. Cardinale was a half owner of the Diesel fishing vessel Santa Lucia, Official Registry No. 236703, and that Frank J. Cardinale was the owner of the other one-half interest in the same vessel;

That Libelant Frances E. Cardinale, the widow of Frank J. Cardinale, was appointed and duly qualified as Administratrix of the Estate of Frank J. Cardinale on November 2, 1954, in probate proceeding No. 13407 in the Superior Court [687] of Monterey County, State of California.

Mr. Nave: I will stipulate to those matters, your Honor.

Mr. Silvers: Further, that the Santa Lucia referred to was a wooden purse seiner, 72.8 feet in length and 20.5 feet in breadth, 9.6 feet in depth, with a gross tonnage of 109, net tonnage of 69.

The Court: Have you filed the stipulation you are reading from?

Mr. Silvers: Sir?

The Court: Have you filed the stipulation you are reading from?

Mr. Silvers: No, I am reading from certain of the allegations of the libel, which I understand are not being contested.

The Court: Well, you filed an answer, did you not? The Respondent Union filed an answer to this libel?

Mr. Nave: Yes, your Honor.

The Court: Why are you reading this? These are admitted by the pleadings.

Mr. Silvers: The issues were raised by the plaintiff because they denied these allegations.

Mr. Nave: We have no knowledge of this.

The Court: Now, you are withdrawing your denial? All right, go ahead. [688]

Mr. Silvers: That is the extent of the stipulation I would like entered at this time, your Honor.

Mr. Nave: I have stipulated as to the ownership.

The Court: As to ownership, as to the issuance of letters of administration, as to the size and weight and tonnage of the ship.

Mr. Nave: I have no information on that, your Honor.

The Court: Well, all right, there is enough information on it already in the case. We have a surveyor's report, haven't we?

Mr. Silvers: I think it is set out there, your Honor. I believe it is a part of the exhibit of the Union Oil Company.

The Court: Those statements are in there.

Mr. Silvers: We would like to call Captain Hansen, as Libelant's next witness.

The Court: All right. Come up, Captain.

### IRVIN HANSEN

called as a witness on behalf of the Libelants, being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows:

The Clerk: Please state your name to the Court.

The Witness: Irvin Hansen. [689]

### Direct Examination

By Mr. Silvers:

Q. You are known as Captain Hansen, sir?

A. Yes.



(Testimony of Irvin Hansen.)

Q. What is your occupation at the present time?

A. Marine surveyor, San Francisco.

Q. How long have you been a marine surveyor, Captain?      A. Since 1939.

Q. And will you describe briefly what your work as a marine surveyor in that period of time includes?

A. From 1936 to 1939 I was connected with the Bureau of Marine Inspection and Navigation, as outside inspector of new construction and damaged hulls. After 1939 I became a general and marine surveyor, and during this time——

Q. (Interposing): Excuse me just a second. Let me interrupt. In order to perform the work you have just described as marine inspection work from 1936 to 1939, was it necessary to have qualifications equivalent to a master's certificate?

A. It was.

Q. Would you continue, please?

A. In 1939, why, I went into the marine surveying business with Captain Genereaux, who had been in that same business for the past 30 years, and during this time, 1939 up to the present time, we represent American President Lines, Pacific Far East, General Steam, Balfour Guthrie, in handling their ships, loading and discharging, general cargo, et cetera. [690]

Also, we are the underwriters on salvage work, engines and hull work.

Q. And that work includes, I take it, the constant examination, inspection and evaluation of the

(Testimony of Irvin Hansen.)

condition of various types of marine vessels, is that correct?      A. It does.

Q. And do you also engage in activities relating to the salvage work in connection with marine vessels?      A. Yes.

Q. Have you been in the past a member of the regular United States Navy?      A. I have.

Q. For how many years were you in the regular United States Navy?      A. 21 years.

Q. Were you retired in 19——?

A. 1936.

Q. 1936? And that was the rank, retired rank, of full lieutenant?      A. Yes.

Q. During your naval experience—did you say 21 years naval experience?      A. Yes.

Q. In the regular Navy; did that include experience and training in all phases of nautical construction and operation? [691]

A. Included engineering, navigation, Diesel engines, submarines, aviation, construction, repair, communications, hydrography.

Q. On the average, approximately how many vessels do you examine, inspect and survey each year?

A. About 150 of the large offshore vessels and probably about three or four hundred of the harbor-based, inside vessels like tugs and barges and yachts, fishing vessels.

Q. More specifically, would you tell the Court what has been your experience in terms of numbers in relation to purse-seiners of the type of the Santa

(Testimony of Irvin Hansen.)

Lucia, the vessel that we are concerned with here? About how many vessels of that type have you examined, inspected and evaluated?

A. Well, at one time we had about a hundred and fifty purse-seiners, and I represented the underwriters of San Francisco and Tacoma, Washington, and B. K. McDonald out of Seattle, and there's one other—I can't think of his name—up there. Quite a few. They had practically insured all the fishing vessels in Monterey and San Francisco at that time, between 130 and about a hundred and fifty of them, purse-seiners and tune-up boats.

Q. And more specifically with respect to the DFV Santa Lucia, had you on a number of occasions prior to September of 1954 made inspection and surveys of that particular vessel?

A. Quite a number of them. [692]

Q. Stretching back approximately how many years?

A. Well, see, most of those purse-seiners were taken over by the government during the war, and as soon as the war was over, why, we represented the owners in reconditioning them in accordance with the stipulated amount of money that the government had appropriated for the reconditioning process.

Sometimes it didn't meet all of it, but they got a fair share. It was on a percentage basis. And then from that time on, why, I was on it every year.

Q. I see. Now, calling your attention to a report of survey which your office made of this particular

(Testimony of Irvin Hansen.)

vessel, the report being dated September 10, 1954, and the date of the inspection September 3rd, 1954, and which is in evidence as Respondent's Exhibit V——

Mr. Silvers: Would you like to retain that, your Honor?

Q. (By Mr. Silvers, continuing): ——you made an inspection on September 3rd of the vessel Santa Lucia, did you not, Captain?

A. Yes, I did.

Q. Did you make another inspection of this vessel on the very afternoon of the explosion, September 28, 1954? A. I did.

Q. Was that approximately an hour and a half before the [693] explosion took place?

A. Well, I don't know the exact time, but it was very close to an hour and a half or two hours, because they were just finishing discharging their fish and were going right over to the Union Oil dock.

Q. You left just before the vessel cleared the fishing dock?

A. Yes, where they were unloading their anchovies.

Q. I see. Now, the exhibit I refer to indicates certain recommendations which you made when you completed your marine survey on September 3rd, 1954; and I am calling your attention to the second page, to the six items which are set out therein.

They read:

“Install a bilge electric alarm. Weigh and fill all

(Testimony of Irvin Hansen.)

CO<sub>2</sub> fire-extinguishing equipment. Thoroughly clean the entire engine room and bilge area. Repair or renew if necessary all electrical outlets and wiring now hanging adrift. Completely overhaul pyrometer, wiring, and thermal couples. Renew union on falling sea suction line, port side."

On September 28, 1954, had those recommendations been satisfied?

Mr. Nave: I object to that, if the Court please, calling for a conclusion of the witness.

Mr. Silvers: I will withdraw that. [694]

Q. (By Mr. Silvers): Preliminarily, with respect to the inspection you made on the afternoon of September 28, 1954, I would like to ask you this: Did you at that time make a complete inspection of the vessel?

Mr. Nave: I object to that, if the Court please.

The Court: Overruled.

Q. (By Mr. Silvers): You may answer the question.

The Court: Did you go aboard the vessel?

Q. (By Mr. Silvers): Did you inspect the vessel? A. I did.

The Court: All right. Now, tell us what you did, what you saw and what you found.

The Witness: From the time I first made the original inspection, these recommendations were——

The Court: Just a minute. You went on the ship, did you?

The Witness: Yes, sir.



(Testimony of Irvin Hansen.)

The Court: Tell us how you boarded it, what you saw on the ship, what you observed.

The Witness: I went on the ship again down to San Luis Obispo port. I think the name of the town is Avila. I went there for reinspection to see whether these recommendations [695] had been carried out, and I checked each one individually all the way through, and they had been carried out, except that bilge alarm, and that hadn't been installed.

Q. (By Mr. Silvers): Did you on the afternoon of September 28, 1954, make an inspection of the deckhouse, including the crew's quarters and galley area? A. I did.

Q. Did you find—withdraw that.

What were the results of your inspection, first of the galley area? A. Just what do you mean?

Q. Well, did you find anything in any way out of order or, in your opinion, in condition which should be remedied or changed?

Mr. Nave: If the Court please, I object to the question's form.

The Court: Objection sustained.

Q. (By Mr. Silvers): What did you observe about the condition of the galley, Captain, in your inspection on the afternoon of September 28, 1954?

A. It was an ordinary galley for a fishing boat. Wasn't anything wrong with the galley. That is the least part of the vessel that you pay too much attention to. [696]

Q. What did you observe about the gasoline

(Testimony of Irvin Hansen.)

tank and the pipe from the gasoline tank down to the auxiliary tank?

A. The gasoline tank, your Honor, is down in the——

Mr. Silvers: I was coming to that.

The Court: Let's come to it right away.

Mr. Silvers: Well, I thought your Honor was also interested in the galley stove.

The Court: Well, let's get it down to this tank.

Mr. Silvers: Let's go down to the engine room.

Q. Will you tell us where the auxiliary gas tank was located?

A. On the port side of the engine room, directly over one of the Diesel tanks, and it hung by straps to beams of the deck.

Q. Is that a standard type installation that you had observed on all the hundreds of purse-seiners that you have inspected and examined through the years?

A. Most of them, yes.

Q. Is there any hazard or danger, in your opinion, in locating an auxiliary gas tank in that position?

A. No, there isn't.

Q. Describe the fittings and the pipes and connections that led from that auxiliary gas tank.

A. It was copper pipe and goes off forward——

Q. Keep your voice up a bit. [697]

A. It is a copper pipe that led from the forward end of the gasoline tank, and then that copper pipe extended forward for about eight or nine feet where there was a Y-connection placed in the pipe in order to take a lead from the Y down to the gasoline-

(Testimony of Irvin Hansen.)

powered generator, and another lead extending farther forward to the gasoline-powered four-inch pump.

Q. Was there any other connection? Was there a bleeder valve in that gasoline tank?

A. There was a bleeder valve at the after end at the bottom of the gasoline tank.

Q. Describe that for us and tell us what its function was.

A. This was a small globe valve that was connected by a union to the bottom of the tank and was generally used to drain off the water that may have accumulated in the gasoline tank.

Q. Is that a standard type of installation aboard this type of vessel?

A. We consider it a standard type in order to avoid water getting into the carburetors or either of the gasoline engines.

Q. What would be the manner in which that valve would be used and operated to perform the function you describe?

A. Generally it's a little open one-quart can, and I went down there and just cracked the valve to see if there was any water, because the water is always in the bottom of the tank [698] and the gas on top. And as soon as we saw, maybe there was half a cup of gasoline was coming out, and we just closed the valve off and that was the end of it.

Q. Is there any hazard or danger of any kind, in your expert opinion, to the installation of a bleeder valve in that way and manner and condi-

(Testimony of Irvin Hansen.)

tion that you have described as you saw it on the Santa Lucia?      A. No, not at all.

Q. Did you make a specific inspection of the gas tank and of the piping and connections leading from it on the afternoon of December 28, 1954?

A. I did.

Q. Describe the detail of your inspection and what you observed at that time.

A. I crawled up on top of the fuel oil tank and then ran my hand over the top of the gas tank to see if there was any oily rags or anything else up there.

Q. Were there any?

A. No. Then I put my fingers down under the bleeder valve to see if I could get any smell of gasoline off that, which there weren't.

Then I went down below where we had the valves to the auxiliary generator and the valve over to the Wisconsin pump, and rubbed my fingers over that valve. Sometimes you get a small formation of gas there, but there weren't any, so I [699] considered the valve in good shape.

Q. Of what material was that tank made, according to your best recollection?

A. Well, about 12 or 14-gauge galvanized metal.

Q. Did it then, after your inspection of it, appear to be entirely tight, sound and secure in all respects?

A. Yes, it did. I had seen it for about eight or ten years.

Q. Did you examine all of the power switches



(Testimony of Irvin Hansen.)

and wires aboard the Santa Lucia on the afternoon of September 28, 1954?

A. I checked all the wiring and everything that was on these recommendations to be done.

Q. Describe the condition of that portion of the ship, the wires, switches, electrical connections.

A. Well, all these purse-seiners have a main switchboard in the engine room, and of course all wires are fused to this switchboard, and all you do is go behind the switchboard to see if the wires are all connected, if it is all taped up.

On this switchboard you have a master switch and also have an overload switch. That's in case you are using too much power, and the circuit-breaker will throw the current off.

When you first go into the engine room and you want to start the motor, you throw the master switch, and that puts your electricity right up to the board, and then if you wanted to have the lights going into the galley, you throw [700] the switch up there which says "galley lighting" and the cabin, which is forward, the sleeping quarters, you throw that switch, and if you want it down in the engine room, you throw that switch on.

Q. Did all of those switches and connections that you have just described, as you observed them on that afternoon, appear to be in sound and proper condition without defect?

A. They appeared to be satisfactory.

Q. By the way, Captain, was there anything in the—withdraw that.



(Testimony of Irvin Hansen.)

Was this inspection service that you told us about which you performed during the years 1936 to 1939 ultimately transferred and taken over by the Coast Guard, those functions, taken over by the Coast Guard?

A. The Bureau of Marine Inspection and Navigation used to be called the old Steamboat Inspection Service when I first entered it, and then it was changed to the Department of Commerce, and then changed to the Bureau of Marine Inspection and Navigation, and just at the time I left it, resigned to go into business for myself, the Coast Guard took it over, and now it is controlled by the Coast Guard.

Q. Is there anything to your knowledge in the Coast Guard regulations which prohibits the kind of bleeder valve that was on the auxiliary tank of the Santa Lucia?

Mr. Nave: I object to that. [701]

The Court: Well, he may be in a position to answer. Objection overruled. Have you discovered any?

The Witness: No, sir, not in the Coast Guard regulations.

The Court: Have you discovered any in any regulations applicable?

The Witness: No. We follow the regulations very closely written by the Bureau of Navigation, the Coast Guard, Naval Officers, and the like.

The Court: Would it be more proper to describe this underneath valve as a pet cock?

The Witness: No, sir, it wouldn't, because a pet

(Testimony of Irvin Hansen.)

cock is a valve that has a little stem on it and you just push it one way or the other and that opens and closes, but a drain valve is a globe valve which has screws to open and close it.

Q. (By Mr. Silvers): How far is the gasoline tank in the engine room overhead which you have described from the galley stove?

A. About 15 or 16 feet, somewhere in that area. It is the full length of the galley and then forward of the engine room bulkhead.

Q. How long was the galley?

A. The galley was about 12 feet from the after end of the galley to the door going into the crew's quarters.

Q. Was the stove against the after bulkhead of the galley? [702]

A. It was.

Q. And is there a bulkhead that divides the galley from the crew's quarters forward?

A. Well, we don't call that a bulkhead. We call a bulkhead a watertight bulkhead like you have down in the engine room.

Q. I am not referring to the watertight bulkhead.

A. There was a bulkhead between the galley and the crew's quarters.

Q. Yes, and the crew's quarters were directly over the engine room, is that correct?

A. That is right.

Q. What kind of an engine was the auxiliary generator?

A. Wisconsin.

(Testimony of Irvin Hansen.)

Q. And what kind of engine with respect to the auxiliary pump? A. That was a Wisconsin.

Q. How were those started?

A. Used a crank like you used to use on an old automobile, like a Ford, right on the forward end of the flywheel, and then you have an interrupted screw, as you call it, and then your crank fits on that and you just turn it over until she goes.

Q. What purpose did the auxiliary generator serve?

A. Well, the auxiliary generator serves the purpose of [703] charging your batteries if and when your main engine fails to sometimes, or when you are in port and not using your main engine and your batteries go down, and you are not going to go to sea, so you want lights on the ship and you use the auxiliary generator to go ahead and charge up. But when you are at sea, you have a generator on the engine which is going, the same as you do on your automobile, and that automatically charges your battery.

The Court: Before the gasoline feed pipe leaves the auxiliary engine, both the auxiliary generator and on the pump there was a valve?

The Witness: Yes, there was a valve on each one and one up on the tank.

The Court: Now, when the auxiliary engine was off, or idle, not running, was it necessary to turn off that valve on the gasoline feed pipe?

The Witness: You always turn off both valves.

The Court: What would be the effect if you

(Testimony of Irvin Hansen.)

stopped running the auxiliary engines and neglected to turn off the feed valve, the valve to the feed pipe?

The Witness: Well, you would have to turn the valve off to stop the engine.

The Court: Is there no other way to stop that engine?

The Witness: Well, it would be very difficult to [704] do it, because it isn't like an automobile engine where you are throwing different power——

The Court: Was there a switch that you could throw off that would interrupt the ignition?

The Witness: Oh, no, sir.

The Court: How many cylinders on this?

The Witness: Two.

The Court: Are you sure there was no switch that interrupted the ignition so that you could turn it off by just switching off the ignition?

The Witness: No, sir. When we started up the auxiliary, we opened up what you would call the valve from below, then go up to the tank and open that valve up and the gasoline would come down in the carburetor, and then you go ahead and use the crank on there and start it up.

The Court: Do I understand if you wanted to turn off one of these auxiliary engines, the only way you could do it would be by shutting off the valve on the feed line?

The Witness: That's the only way I know.

The Court: Well, now, wouldn't the engine con-



(Testimony of Irvin Hansen.)

tinue to run until the gasoline which had accumulated in the carburetor had burned up?

The Witness: Not any more so than the gasoline in your automobile engine. As soon as you turn the switch off, the engine stops. [705]

The Court: Doesn't it stop then because it doesn't get ignition?

The Witness: Yes, sir.

The Court: You tell me there is no way of shutting off the ignition, the only way you can stop your auxiliary engine is by shutting off the supply of gas.

The Witness: Well, you could shut off your ignition by going forward.

The Court: I asked you that before and you told me you couldn't do it.

The Witness: Well, I mean you could go to the board and cut your power off on the board so you would have no electrical power to your spark plugs. But they don't generally use that. They generally close the valves off and that stops it.

The Court: Don't you shut your engine off quicker by shutting off the ignition?

The Witness: Yes, you do, but you have a situation then that would flood your carburetor.

The Court: Never mind that situation. What I want to know is this: If you depend upon the shutting off of a valve to stop the operation of these auxiliary engines, don't the engines continue to operate until all the fluid is out of the carburetor?

The Witness: If you still had your power [706]



(Testimony of Irvin Hansen.)

from the spark plugs you probably could run it for a little while.

The Court: How long would you say?

The Witness: Oh, about two or three minutes.

The Court: As a matter of fact, how these engines shut off is by throwing the switch?

The Witness: Lots of times that is the first thing they generally do is pull the switch and then close the valve.

The Court: Why didn't you tell me that before?

The Witness: Well, maybe I was a little bit confused.

The Court: Now, then, if somebody threw off a switch and stopped running these engines by throwing off the switch and neglected to turn off the valve, what would happen to the flow of gasoline? Would it continue to flow into the carburetor, the gasoline?

The Witness: If the valve was open and the engine was stopped, you would flood your carburetor.

The Court: And after your carburetor flooded, what would happen?

The Witness: You might have an overflow.

The Court: And would it continue to overflow with the force of gravity?

The Witness: That would be a very difficult question to answer, sir, because I have never had that condition [707] to exist.

The Court: Is this a gravity gasoline feed?

The Witness: Yes, sir, it is.

(Testimony of Irvin Hansen.)

The Court: Suppose we take a ten-minute recess.

(Short recess.)

Q. (By Mr. Silvers): Calling your attention to the auxiliary engines and the switch panel in the engine room that the Court was asking you about, did you request Frank Cardinale, who died in the explosion, to perform an operational test of both auxiliary engines while you were making your inspection?

A. I had him start both engines, yes.

Q. Did you actually see him throw the switch and start the engine?

A. Yes, I saw him start the engine, yes. I was standing in front of the main engine and I said, "All right, Frank, start this pump first and we will see how that works," and he started it, and I said, "All right, close it, and start the auxiliary generator." I wanted to see if they would run because they are important parts of the vessel.

The Court: What did he do when he started the engine?

The Witness: I didn't do anything.

The Court: I said, what did he do.

The Witness: He went over and threw the switch [708] that would put the electricity through the spark plugs, and then he opened up the valves on the gasoline tank, and the other valve, and then he got the crank and cranked the engine, and it started up and ran for two or three minutes, and then I said, "Stop it."

(Testimony of Irvin Hansen.)

The Court: What did he do when he stopped it?

The Witness: I can't answer that. I don't know.

The Court: Didn't you watch him as he stopped it?

The Witness: I was standing right within about three or four feet of the engine when he stopped it.

The Court: I said, did you watch him as he stopped it?

The Witness: Yes, I saw him.

The Court: What did you see him do?

The Witness: All I saw him do was to turn the valve off that let the gasoline down to the auxiliary engine.

Q. (By Mr. Silvers): Did you actually see him turn the valves off? A. Yes.

The Court: Did you see him go to the switch valves at all?

The Witness: No, because he was going to start the other engine.

The Court: Are both engines on a separate switch?

The Witness: I think both engines, both of [709] those engines are connected up to the board on one switch so that you throw that switch and then you put the power to both of them.

The Court: Are you sure of that?

The Witness: No, sir, I am not sure of it.

The Court: Would that be good seamanship instruction?

The Witness: Yes, sir, I think it would be good,

(Testimony of Irvin Hansen.)

because when either one of them run, you wouldn't want separate lines just to two engines. I have never seen it that way.

The Court: That would be if you wanted to have the generator running and the pump turned off, you couldn't turn the pump off right away, could you? You could only turn it off by shutting off the supply of gasoline, isn't that right?

The Witness: If there was just one line that went down there, that would be a fact.

The Court: Are you sure there was one line, one electric line, to both engines?

The Witness: No, sir I am not.

The Court: There is one more question I would like to ask you: There is some testimony in this case that prior to coming in and docking at the dock for gasoline, the men went out and washed off the decks and washed off the remaining debris left aboard the ship from the fish; and there is some testimony that they washed up, too, washed their hands and faces to clean up a bit. [710]

Now, what is the procedure followed when you are flushing the decks to get rid of the remains of fish?

The Witness: They have a connection up on deck, and they can run two pumps if they want. They have one four-inch centrifugal pump that, if they are running the main engine, they can connect that pump and that brings water up to the deck, and they have a hose there that they can connect



(Testimony of Irvin Hansen.)

up, and then they go down in the fish hold and wash the fish hold out and then pump it overboard.

Or, if the engine is stopped, they can go down and start the auxiliary pump, the Wisconsin pump, and that will take sea water and pump it up on deck through the hose and down into the fish hold.

The Court: So that if they are flushing out the hold, flushing off the ship, and the engine is turned off, they use the pump?

The Witness: They would use the auxiliary pumps then.

The Court: And how would they ordinarily wash their hands?

The Witness: Well, you see, that is a fresh water pump. They had two of them, one for what they called the service pump that went to the toilet, and those were what they call Fairbanks Morse pressure pumps.

The Court: Were they manually [711] operated?

The Witness: No, sir, they are operated by a little motor.

The Court: Another motor?

The Witness: Yes.

The Court: With another engine?

The Witness: No, sir, no engine, just a motor.

The Court: An electric motor?

The Witness: An electric motor, yes. Just throw the switch on the board where it says, "Service pump," and that runs under compression.

The Court: Where was that motor located?



(Testimony of Irvin Hansen.)

The Witness: Well, that was located at the after end of the engine room.

The Court: How far away from this gasoline tank?

The Witness: Oh, about eight feet.

The Court: And that electric motor operated a small pump which the men would use when they were washing themselves?

The Witness: They were connected directly up to the galley. It took the suction off the fresh water tank.

The Court: Was there also a hose out there to the deck?

The Witness: No, that just goes up to the service pump. It is just a one-eighth horsepower motor.

The Court: Does that go on automatically [712] if pressure in the tank goes down?

The Witness: Yes, it does.

The Court: So if the men were drawing water off that tank to wash up, and the water in that tank went below a certain level, the electric motor down in the engine room would start going?

The Witness: That's right, yes, sir.

The Court: And that motor was about eight feet away from the fuel tank?

The Witness: Yes.

The Court: When you say eight feet away, do you take into consideration the distance from the deck of the engine room up to the——

The Witness: No, sir, from longitudinal.

(Testimony of Irvin Hansen.)

The Court: You don't measure it on any diagonal basis?

The Witness: Not on a vertical, no sir.

The Court: All right.

Q. (By Mr. Silvers): Did you make an inspection, Captain, of that particular electric motor on the afternoon we are talking about?

A. No, sir, I did not.

The Court: Let me ask one more question: Is that located on the floor of the engine room?

The Witness: No, sir, that's located on a [713] shelf.

The Court: How high?

The Witness: About four feet above the floor plates.

The Court: All right.

Q. (By Mr. Silvers): There has been testimony in this case, Captain, that one of the crew members who assisted in the engine room detail, Francois Cardinale, turned off the valves that fed these auxiliary motors after the men had washed the ship down at sea and just before they came into the gas dock for fueling.

When that valve is turned off after that operation, that would close the flow of gas to the carburetor, would it not? A. Yes, sir, it would.

Q. And no condition of overflowing could then follow in point of time?

A. No, sir. You have two positive valves there.

The Court: If those valves were turned off, nothing could get by them?

(Testimony of Irvin Hansen.)

The Witness: No, sir.

The Court: But if they were open, gravity of flow would continue and could flood the carburetor and continue to flow?

The Witness: Sir, that would happen instantaneously. If you are standing there in the engine room, you could see [714] it right away.

The Court: Yes, if you paid attention to it.

The Witness: Well, you smell gasoline pretty quick, sir.

The Court: All right.

Q. (By Mr. Silvers): When you had completed your inspection of this vessel on the afternoon of September 28th, was she, in your opinion, seaworthy?

A. Yes, sir, except for that pump.

The Court: Except what?

The Witness: The pump.

The Court: Except the pump?

The Witness: Except this.

Q. (By Mr. Silvers): What do you mean by that, Captain?

The Court: Wait a minute.

The Witness: I mean this bilge alarm, I don't mean pump. That bilge alarm, if you are not familiar with that, sir, that is a float valve that you set up about eight or ten inches below the bilge of the engine room, and that operates on a sliding rod, and if the water should ever get into that engine room and you didn't know it, and it got up above eight inches, it would push this float up until it

(Testimony of Irvin Hansen.)

made electrical contact with a little motor that would [715] immediately set the alarm.

Q. (By Mr. Silvers): Well, with that reservation, the reservation of the absence of the bilge alarm, was the vessel in your opinion seaworthy?

A. Yes. We just put those on lately.

Q. You mean the bilge electrical alarm?

A. Yes.

Q. Could the absence of that bilge electric alarm have any relationship to the production of the fire and explosion that took place, in your opinion?

A. No, not at all.

Q. It relates only to the control of water?

A. That is right.

Mr. Silvers: Thank you.

#### Cross-Examination

By Mr. Vartan:

Q. Your Honor, please, I left Mr. Frank Cardinale's deposition there. This has been introduced in evidence, your Honor.

The Court: Yes.

Q. (By Mr. Vartan): Do either one of these Wisconsin pumps that are run by gasoline through the feed lines make a noise when they are in operation? [716]

A. Well, like any gasoline motor, yes, they make a noise because they turn over very fast. I think they turn over about 4,000 rpm's.

Q. And if a vessel such as the Santa Lucia with

(Testimony of Irvin Hansen.)

the portholes and hatches, and so forth, to the engine room, such as has been described, which were open, were stopped within two or three feet of the gas dock, a person two or three feet above on the gas dock would hear those motors operating, wouldn't they?

A. You can hear them for quite a ways because they are a high-speed motor.

Q. And knowing the quality of the noise of the motor, if the gas attendant on the gas dock did not hear, stated that he did not hear any engines running on the Santa Lucia before the gassing and fueling operations started, it would be your opinion that the engines were not operating, isn't that true?

Mr. Nave: I object to that, if the Court please, as calling for a conclusion of the witness.

Mr. Vartan: There have been a lot of questions asked, even by your Honor, you know, that, in fairness to the Court, assume certain things.

The Court: We were just questioning an expert.

Mr. Vartan: Yes.

The Court: But you have in evidence the statement [717] of Caldwell. Caldwell said he listened and heard the engines turned over.

Mr. Vartan: Yes, that's what I want to be sure of.

The Court: That is in Caldwell's statement. That is in the statement which was introduced by Union. Cardinale says the engine was turned off, so we have direct testimony on that. Everybody agrees that the engines were turned off after the ship docked.



(Testimony of Irvin Hansen.)

Mr. Vartan: I can be very sure, your Honor.

Page 19 of Frank Cardinale's deposition says——

The Court: Counsel, I read that.

Mr. Vartan: He says he turned off the gas.

The Court: Counsel, give me credit. I read it.

Mr. Vartan: I have no further questions.

The Court: Mr. Nave, have you any questions?

Mr. Nave: Yes, I have, your Honor.

### Cross-Examination

Mr. Nave: I call your attention to page 66 of Mr. Hansen's deposition. I want to ask him some questions in connection with that.

Q. (By Mr. Nave): Commencing on line 10, or line 7, Captain Hansen, do you recall that on November 28, 1955, your deposition was taken by me in connection with the trial of the case of [718] Cardinale against Union Oil Company?

A. I presume that is true. You took a deposition.

Q. At that time I asked you certain questions to which you gave certain answers in reference to your inspection aboard the fishing vessel Santa Lucia. I ask you now if I didn't ask you this question, to which you gave this answer?

“From your previous inspection, Captain, on the 10th of September, 1954, the gasoline tank was not painted at that time?”

To which you answered:

“It was painted but the paint was kind of old on

(Testimony of Irvin Hansen.)

it and so the same way on the Diesel tanks, also the engine room, so they just painted everything."

Is that correct?

A. That is correct.

Q. The next question:

"Then on your inspection of 28 September you saw that the gasoline tank, as well as the other tanks, had been painted?"

To which you answered:

"Had all been painted, yes, sir."

Is that correct? A. Yes, sir.

Q. Next question:

"But at no time were you able to or did ascertain what [719] the tank itself was constructed from?"

To which you answered:

"No, sir."

Did you not? A. That is right.

Q. Next question:

"You don't know whether it was 12 gauge or 16 gauge or steel or some other metal?"

To which you answered:

"No, sir."

A. That is correct, but it was steel. We know that. All of them were steel and they are all more or less the same kind.

Q. At the time your deposition was taken, Captain, you stated you didn't know what material it was constructed from and you didn't know the gauge? A. I still don't know the gauge.

Q. Next question:

"Now, on your inspection of that vessel on the

(Testimony of Irvin Hansen.)

10th of September, did you at that time have the Wisconsin pump and the auxiliary generator operated off the gasoline system?

“Answer: I did, yes, sir.”

Is that right?

A. Yes, sir, to the best of my knowledge.

Q. All right. On page 69 this question was [720] asked, beginning at line 17:

“Question: And what is done, what are the things that are done to start up the Wisconsin gasoline motor?”

Your answer, sir:

“He just presses a button like you do on your car.”

Did you give that answer at that time?

A. Well, I did, if you have it there.

The Court: Did you make that answer to that question?

Q. (By Mr. Nave): Did you give that answer to that question at that time?

A. That's what I said, I did.

Q. Question: “It has a self-starter?”

“Answer: Self-starter.”

Did you give that answer to that question at the time of your deposition? A. Did I say so?

The Court: Did you? He is asking you, Witness.

The Witness: Well, if I did, sir, all right.

The Court: Was it the truth? [721]

Q. (By Mr. Nave): Is that the truth?

A. It must have been the truth.

(Testimony of Irvin Hansen.)

The Court: Well, is it the truth? Did these engines have a starter for the ignition or not, or don't you remember?

The Witness: Let me answer this, your Honor.

The Court: Answer any way you want.

The Witness: There is about 150 of these boats. Some of them, we crank them, and some of them start, and I just don't remember.

The Court: You don't remember?

The Witness: I don't remember now. If I said so, it's the truth.

The Court: You see so many of these boats, you don't remember one from the other, do you?

The Witness: It is pretty difficult, sir.

Q. (By Mr. Nave): The next question:

"How about the auxiliary generator? Is that the same?"

To which you answered:

"The same thing."

A. I presume so.

Q. Question:

"The same thing is true?"

"Answer: Yes, Fairbanks Morse." [722]

Is that right, sir?

A. Yes. Well, you could qualify that, sir. It doesn't make any difference whether you press a button or put a switch on.

Q. I am just asking you, Captain. I don't want to argue with you.

A. Well, I mean it's the same procedure.

Mr. Silvers: He is entitled to explain.

(Testimony of Irvin Hansen.)

The Court: He can explain his answer, but what the Captain is telling me, it doesn't make any difference. It is my business to determine whether it make a difference. I think it does make a difference.

I think it makes a distinct difference as to whether or not these engines can be shut off without turning off that gasoline valve, and what happens if the engine is shut off and the gasoline valves are not shut off. It makes a big difference, and whether or not such a condition is a seaworthy condition aboard a ship of this type.

Q. (By Mr. Nave): Now, Captain, this question was asked you at the time of the taking of your deposition:

"How about the gasoline engine that runs the auxiliary generator?"

You stated:

"I don't know that, either." [723]

Is that your answer?

Mr. Silvers: This is unfair, your Honor. There is a previous question four lines above that.

Mr. Nave: I will be very glad to go back. Very glad to read any part, Mr. Silvers. I will go right back up to where we left off.

I asked you the question:

"Fairbanks Morse? Now, the Wisconsin gasoline pump is what size and horsepower?"

Your answer was:

"I don't know. It is just the standard equipment that they put out for all these pumps. It's about



(Testimony of Irvin Hansen.)

that long and the pump sets on this end of it and it is all one unit. The pump and engine are right together."

That was your answer, sir, to that question?

A. That is correct.

Q. "Question: You don't know, Captain, as to its horsepower?

"Answer: No, I don't."

Is that right?

A. That is right.

Q. "Question: How about the gasoline engine that runs the auxiliary generator?

"Answer: I don't know that, either." [724]

Is that right, sir?

A. Talking about horsepower?

Q. Yes. A. No, I don't.

Q. "Question: Is that the approximate size, approximately the same size?

"Answer: No, that is a smaller."

Is that right? A. Yes.

Q. "Question: A smaller one?

"Answer: Yes.

"Question: And that also is operated by a self-starter?

"Answer: Yes."

Did you give that answer at the time of your deposition, sir? A. Yes.

Q. "Question: Switch or button?

"Answer: Button.

"Question: And where are the buttons located?

"Answer: Well, they are right here along the

(Testimony of Irvin Hansen.)

motor, alongside the motor. I don't know just exactly because I was—I never start anything myself up on these inspections. I have the owners always do it. I was just standing about six or seven feet away and I said, 'All right, start up [725] that motor,' and he went and opened the valve here and came down and then closed the valve after we got through."

Is that right, sir?

A. (Nodding in the affirmative.)

Q. Page 72, line 8, this question was asked of you in reference to the gasoline tank, and you gave this answer:

"Did you determine on the inspection of this last inspection, September 28th, the amount of gasoline that was in the gasoline tank?

"Answer: No, sir, I did not."

Is that right, sir?            A. That is correct.

Q. "Question: You did not make any sounding?

"Answer: No, sir."

Did you give that answer?            A. Yes.

Q. "Question: You did not insert any measuring stick?

"Answer: No.

"Question: Did you tap the tank to determine how much gas if any there was in the tank?

"Answer: No, sir."

Is that correct?

A. That's right. No one else would ever dare to do that. [726] either.

(Testimony of Irvin Hansen.)

Q. "Question: So you don't know at that time how much gasoline was in the gasoline tank itself?

"Answer: No."

Is that your answer? A. Yes.

Q. "Question: I believe I asked you this. I just want to be sure I understood it if I did, that you did not at any time determine the composition of the tank itself as to material it was built out of, as to whether it was steel or galvanized iron?

"Answer: No, sir."

Is that right, sir? A. That's right.

Q. "Question: Or brass or anything else? And you on your prior inspections, speaking now of your inspection of September 10th at Monterey, did you make any examination of the gasoline tank at that time other than visual?

"Answer: I just crawled up to the top of it and took a look around on top to see if there was any piece or wrenches or anything of that sort, because they have a habit of putting everything [727] out on top of the tank. Looked to see whether it was clean."

Is that right, sir?

A. When I say tanks, I mean on these Diesel tanks and also up on top of the gasoline tanks.

Q. And also up on top of the gasoline tank?

A. (Continuing): But mostly it is always rags they put up there.

Q. Now, Captain, there were batteries in the engine room, were there not? A. Yes.

Q. And those batteries are heavy-duty type?

(Testimony of Irvin Hansen.)

A. They are.

Q. And the system was a 32-volt system?

A. Yes, sir. 100 amp. per hour.

Q. Captain, on the morning you were aboard the Santa Lucia on the day of this explosion, did you have coffee in the galley?

A. Before, I did, yes. In the galley, yes.

Q. Did you make any inspection of the stove aboard the ship at that time?

A. Yes, sure, I looked at the stove.

Q. You looked at the stove? A. Yes.

Q. And do you know what the source of fuel was that fed [728] the burners?

A. Sure. Diesel oil.

Q. Diesel oil? And do you know how the Diesel oil is conveyed from the storage tank to the stove?

A. Yes, the storage tank is up on top of the galley. It comes through by gravity.

Q. There was a tank up on top of the galley, is that your testimony, sir?

The Court: If you remember, Captain.

The Witness: I don't remember now. Most of them have a tank on top of the galley.

Q. (By Mr. Nave): You don't remember now whether they had a tank on top of the galley or not?

A. I don't know, but they are fed by gravity.

Mr. Nave: I have no further questions.

The Court: Thank you. Witness excused.

(Witness excused.)

Mr. Silvers: Respondent Cardinale and Libelant Cardinale rest, your Honor.

The Court: Everybody rests. I tell you what to do. Check over until tomorrow morning to see if you have any more evidence. Suppose you come in tomorrow morning at 10:00 o'clock. Or if you want to come inside a few minutes, I will see you [729] inside.

Mr. Vartan: Your Honor, could we see you in chambers?

The Court: Yes, come inside.

(Thereupon, this cause was recessed to Wednesday, September 11th, 1957, at the hour of 10:00 o'clock a.m.) [730]

September 11, 1957—10:00 A.M.

The Court: You gentlemen have had overnight to determine whether you have any additional evidence to present. Is there any evidence Libelants desire to present?

Mr. Vartan: No, your Honor.

The Court: Is there any evidence Respondent Union Oil desires to present?

Mr. Nave: No, your Honor.

The Court: And Respondent Cardinale?

Mr. Silvers: No, your Honor.

The Court: Do you desire to present any further evidence in connection with the petition by Cardinale and the owners of the Santa Lucia for limitation?

Mr. Silvers: No, your Honor.



The Court: Has the answer to the petition for limitation been prepared and filed?

The Clerk: The answer has been filed, your Honor.

The Court: So the case is now submitted?

I will be prepared to give you my decision tomorrow morning. I will announce it from the bench and it will be given on the record. Will 10:00 o'clock be convenient to you all, or would you prefer 1:00 o'clock?

Mr. Silvers: That will be better for me.

The Court: Then we will adjourn until tomorrow [731] afternoon at 1:00 o'clock, and I will give you my decision.

(Whereupon, this case was submitted and the proceedings closed.)

### Certificate of Reporter

I (We), Official Reporter(s) and Official Reporter(s), pro tem, certify that the foregoing transcript of 732 pages is a true and correct transcript of the matter therein contained as reported by me (us) and thereafter reduced to typewriting, to the best of my (our) ability.

/s/ [Indistinguishable.]

/s/ [Indistinguishable.]

/s/ [Indistinguishable.]

[Endorsed]: Filed January 30, 1958.

